

No. 3

April, 1914.

Vol. VII.

Bulletin
(OF THE)
**Ontario Hospitals for
the Insane**

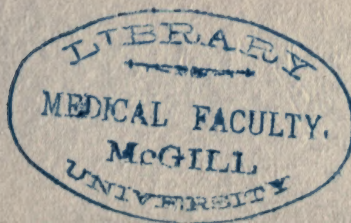
*A Journal Devoted
to the interests of
Psychiatry in Ontario*

Printed by Order of the Legislative Assembly



FOR THE DEPARTMENT OF THE PROVINCIAL SECRETARY.

Printed by L. K. CAMERON, Printer to the King's Most Excellent Majesty.



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Every medical practitioner in Ontario is invited to interest himself in the success of the Hospital for the Insane in the district in which he resides. Every Superintendent realizes that the successful results aimed at in the modern treatment of the Insane can be more readily secured by enlisting the co-operation and sympathetic support of the medical men who were formerly the physicians to the patients in their homes. The family Physician naturally watches with interest the course of the hospital treatment and should consider himself an honorary member of the visiting staff of the hospital to which his patients are sent for treatment.

PROCEDURE TO SECURE ADMISSION OF PATIENTS.

The Provincial Secretary desires that all cases that are likely to be benefited by treatment in a Hospital for the Insane should be admitted with the least possible delay.

(1) Where the property of a patient is sufficient, or his friends are willing to pay the cost of the Medical Examination, the family Physician should apply directly to the Medical Superintendent of the Hospital for the Insane, in whose district the patient resides, for the necessary blank forms. These being secured, they should be properly and fully filled in, dated, signed in presence of two witnesses by the medical men in attendance. They are then returned to the Hospital, and if satisfactory, and there is accommodation, advice will be sent at once to have the patient transferred.

(2) Where the patient has no property, and no friends willing to pay the cost, application should be made to the head of the Municipality where he lives, who, after satisfying himself that the patient is destitute, may order the examination to be made by two physicians, and a similar course to the above is then followed. The Council of the Municipality is liable for all costs incurred, including expenses of travel.

(3) Where the patient is suspected to be dangerously insane, information should be laid before a magistrate, who may issue a Warrant for the apprehension of the patient, and if satisfied that he is dangerously insane may commit the patient to the custody of someone who will care for him, but not to a lock-up, gaol, prison or reformatory, and notify the Medical Examiners. The Magistrate should then send to the inspector of Prisons and Public Charities, Parliament Buildings, Toronto, all the information, evidence and certificates of insanity. The costs incurred by this method form a charge against the County, City or Town in which such patient resided.

Voluntary Admission.

The Superintendent of a Hospital for Insane may receive and detain as a patient any person suitable for care and treatment who voluntarily makes written application on a prescribed form, and whose mental condition is such as to render him competent to make application.

A person so received shall not be detained more than five days after having given notice in writing of his desire to leave the hospital.

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The Bulletin
OF THE
Ontario Hospitals for the Insane

*A Journal Devoted to the Interests of
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**RECEPTION HOSPITALS FOR CASES OF
MENTAL DISEASE.**

BY J. M. FORSTER, M.D.,

Medical Superintendent, Hospital for Insane, Toronto.

Provision has just been made in the Statutes of the Province of Ontario for the establishment of Reception Hospitals in cities of more than one hundred thousand inhabitants, for cases of mental disease of all grades and types. This Act was introduced before the Legislative Assembly by the Hon. W. J. Hanna, Provincial Secretary, who has proved himself always desirous of having Ontario take a leading place in every reform that makes for human betterment. When carried out practically this legislation will mark another mile stone in the progress this province is making in the proper hospital treatment of those suffering from mental illness.

It is a well-known fact that diseases of the mind are much relieved by suitable surroundings in a quiet rural district. An ideal site for the large new hospital was secured close to the town of Whitby, on the shore of Lake Ontario, to which the institution known as the

Hospital for the Insane, Toronto, will next year be moved. While keeping in mind the many advantages of such a change it could not be carried out except by the sacrifice of certain privileges enjoyed by the present location of the hospital in Queen Street West, such as the convenience for the reception of the patient, the proximity to the relatives and the family physician, and for the classes of medical students who attend the hospital for clinical purposes. With the establishment of a Reception Hospital in the city, all these would be provided.

The Toronto City Council has enacted a by-law granting \$100,000 towards establishing the new institution, and while awaiting the erection of the building required the Board of Governors of Toronto General Hospital has generously come forward and offered the free use of such of the old hospital buildings on Gerrard Street East as may be required. The pavilion has been selected as most suitable, and is now being furnished and equipped so as to be ready for patients about May 15th.

One of the most serious difficulties met with in the treatment of the mental patient is that he or she does not come to the hospital early enough to obtain the full benefit of treatment, and every facility should be provided for the reception of such cases at as early a date as possible. At the onset of the symptoms of mental impairment the patient is, in many instances, possessed of such an insight into his or her illness that a ready response is made to the suggestion for hospital care, and a great step towards success in treatment is thus made by gaining the co-operation of the patient and encouraging the voluntary admission legalized by the Provincial Hospital Act of 1913. The city Reception Hospital will certainly facilitate early admission.

Another advantage of paramount value is that the patient can visit the hospital for advice, in the same way as provided by the outdoor department of any general hospital. This will be of great service too in the carry-

ing out of the provisions of the probational discharge system of the large Provincial Hospital. The reports can be made personally by the discharged patient or by his relatives or friends. This social feature of the work is being appreciated more and more, both here and abroad. In the reception and discharge of patients the city branch hospital should be in the closest touch and sympathy with the large Provincial Hospital outside, thus encouraging and ensuring the hospitalization of the whole in the fullest sense of all that this means. The Reception Hospital must then be regarded as constituting an important part, a receiving station, of the larger institution.

Every facility will be afforded in the Reception Hospital for the teaching of the students of the University where the methods of examination and treatment can be closely observed and practically taught. There is no broader field for the dissemination of knowledge in psychiatry than through the teaching of the medical student in clinical methods which he will apply later in his general practice.

This hospital, if for no other reason, is amply justified by providing a means by which there can no longer be a possibility of a mental case finding his way to the gaol—a practice obsolete and unjustifiable. With a Reception Hospital at hand no magistrate would think of committing an insane person to gaol.

The history of every such Reception Hospital shows that a large percentage of the patients who were given the advantage of treatment in the early stages recovered without having to be sent to the larger institution. The excellent work accomplished by Reception Hospitals was first demonstrated in Germany, where, under the name psychiatric clinics, it has for years been demonstrated that, in the incipient stages, mental and nervous diseases can be cured without having to commit such patient by legal process.

The establishment of Reception Hospitals, properly equipped, as the larger Provincial Hospitals are now, with facilities for treatment and laboratory study, will gradually demonstrate what can be accomplished in the prophylaxis of mental disorders, not only by making provision for emergency cases, but by fostering and developing means for the study of individual cases, with a view to an enlarged knowledge of how to prevent brain disease. The attitude of the medical profession and the general public must change as a more general interest will be taken in the early treatment of cases. The medical practitioner in Toronto who finds that he has an incipient case will not hesitate to point out to the patient and his friends that a Reception Hospital has been conveniently provided, the advantages of which can be secured with no other formality than has hitherto been necessary to secure admission to an ordinary general hospital, and where the family physician can keep in touch with, and, in a measure, co-operate in the treatment of his patient. The plan provided by the Act, if properly worked out, can be made ideal for treatment and laboratory study.

In securing the success of Reception Hospitals in Ontario advantage has apparently been taken of the experience in other countries where it has been shown that similar institutions, although provided by the municipality and liberally assisted by civic grants, should be under the direction and control of the State. In no other way can a large measure of success be attained. The Hon. Mr. Hanna has evidently given the matter careful attention, for this Act provides that the Reception Hospital, while maintained and controlled by the province, will sustain the same relation to the municipality as a general hospital. Patients unable to pay will be provided for by the municipality to which they belong at the same rate as if they had been admitted to a general hospital. As soon as they are certified they will be transferred to the larger Provincial Hospitals for further treatment

and care. Several features of the General Hospital Act of Ontario, 1912, now pronounced second to none in the world, have been incorporated in The Reception Hospital Act, which will be considered by medical men as one of the most advanced pieces of legislation placed upon the Statutes of Ontario during the recent Session of the Legislature.

INSANITY: A DISORDER OF INSTINCT.

An Address to the Nursing Staff of the Retreat, York, England, by JOHN MACPHERSON, M.D. (Edin.), F.R.C.P. (Edin.), Commissioner in Lunacy for Scotland.

It is often helpful to look at matters which we have always regarded as settled facts from another point of view, even when that point of view does not appear to help us very far on in our practice or work. In looking around for a subject upon which to address you, I resolved to select one to which my own attention had been directed and which certainly presents another point of view of the nature and manifestation of insanity.

In ordinary conversation we are accustomed to speak of "diseases of the mind" or "mental diseases" by which we mean disorders of the intellect only. We probably mean something more, but in practice we endeavor to reduce all insanity to disorders of the intellect, and even when we find that an insane person's reasoning is unimpaired we endeavor to justify this view on the ground that, while apparently his intellect is unimpaired, yet that in reality, under the surface somehow or another, it must be disordered. For we say to ourselves and to others, "No person who behaves as this man or this woman behaves can have the full use of their reason—a reasonable being would not do so and so." But in fact you know and I know that reasonable people do most extraordinary things—unaccountable things—if reason is to be our sole standard of conduct. We also know that many of our patients can reason as correctly and as acutely as ourselves—some of them, perhaps, better. There must therefore be something radically wrong in our conception of insanity and of the insane when we

reduce all mental disorder to affections of the reason, for that is what we practically do at present.

There are three things of which we know next to nothing, and they are the three most important things in our existence. These three things are birth, death and life. Birth and death are, of course, incidents of life; life, therefore, is the subject which must engage our attention. The manifestations of life are innumerable, but human reason is so developed that it is able to classify and arrange them in scientific order.

The whole material world is, if not itself alive, permeated by life. But what we mean by life is organic life—life associated with some living organism, however humble that organism may be. The manifestations of life become more and more obvious, more and more complicated the higher we ascend in the scale of living things.

To begin with, we have a living organism of which it is difficult to say whether it is plant or animal. From this on the one side branches off an ascending order of plants, from the humble algae or lichen to the giant forest tree; on the other side there branches off an ascending order of animals, from the protozoa or bacteria to man. In animal life there are two supreme manifestations, instinct and reason. In the insects, instinct, which, if it is not life, is inseparable from life, reaches its highest development, but it is unaccompanied by developed intellect as we understand that word. In the vertebrates—that is, animals with a special brain and a backbone containing a spinal cord, and which range from the fishes to man, the great characteristic is the presence of intellect; it may be very rudimentary intellect, but in a sense it is always there. The higher vertebrates, a little lower than man, give unmistakable evidences of its presence, as we see it in such intelligent animals as the dog, but in man intellect reaches its highest culmination and has been aptly described as his crown. The lower vertebrates are almost entirely guided by in-

stinct, and man himself in his ordinary every-day mode of life is as instinctive as any animal. It is only when he is placed in circumstances calling for the use of reason that he exercises his intellect. When we consider, for example, that most men eat, sleep and fall in love, and how immensely these three instinctive processes bulk in the lives of humanity, we realize that intellect, when it is called upon in connection with them, is requisitioned with the object of regulating and refining our indulgence in them, or increasing our pleasure in them, or preventing other people from robbing us of our enjoyment of them. Even among different classes of men the use made of intellect varies greatly. A savage leads, on the whole, a less intellectual and a more instinctive life than a modern man of business, while the life of an idiot or an imbecile is almost wholly instinctive and unintellectual.

But the terms "instinct" and "intellect" must be more carefully defined in order that we may have no doubt as to their meaning. The best way to do this is to give examples of instinct as it exists, say, in the insect. With many such examples you are all more or less familiar. For instance, the work of the bee; the collection of honey; the mathematical formation of the honeycomb which could not be excelled for adaptation to its purpose by the highest human intellect; the rearing of the young; the selective feeding of the future queens; the killing of the drones and the swarming off from the hive. The life of the bee is so familiar to us that we have ceased to wonder at it. But there are other instances of insect life that are positively startling. The eggs of the horse fly are hatched in the stomach of the horse, and the fly therefore lays its eggs on the shoulder or legs of the horse—parts of the body which the horse can conveniently lick.

Certain species of wasps lay their eggs on spiders, beetles or caterpillars in order that when the eggs are

hatched the larvæ or young wasps may live by eating these animals. But as it is necessary that the young wasp should live upon fresh meat, wasps do not kill their victims, but paralyse them by means of the following delicate operation. They accurately sting the victim just into the nervous motor ganglia which control the motions of the limbs. Some of the victims have as many as nine pairs of these motor ganglia, and the wasp in that case administers nine stings with unerring exactitude in the right place.

The sitaris, a little beetle, lays its eggs at the entrance of an underground passage dug by a kind of bee. When the egg is hatched, the larva or young beetle attaches itself to the male bee as it leaves its underground residence. From the male bee it transfers itself to the female bee and quietly waits until she lays her eggs, upon which it lives until it becomes a perfect beetle.

These strange events are mentioned not for the purpose of exciting your wonder, but for the purpose of leading you to consider their true import.

(1) The first thing I would desire you to observe is that they are not solitary incidents in nature, for nature is made up of such incidents; in fact they form nature; in short they are life.

(2) They are not the result of intelligence or reason as we understand that word or of experience or of training.

(3) They are exact and unerring adaptations of means to the required ends.

Take for example the knowledge—if we can call it knowledge—displayed by the wasp which stings its victim to paralyse but not to kill. What is implied here?

(a) A knowledge of anatomy and physiology possessed by few human beings, and then only acquired after a life-time of study.

(b) An unerring skill in performing a delicate surgical operation.

(c) A knowledge of the future requirements of its progeny on the part of a creature which has never had any progeny, which will not live to see them, and which has never seen its own parents.

I might go on indefinitely, for instinct is the predominating factor in all life, but I have said enough to bring out this particular point of view.

It is now necessary to refer to intellect or "mind" as we wrongly call it. Intellect is feeble where instinct is supreme, and instinct is comparatively feeble where intellect is supreme. As the great French philosopher, Bergson, puts it, "Intellect seeks but does not find, instinct finds without seeking." There is no intelligence in which some traces of instinct cannot be discovered, and no instinct that is not "surrounded by a fringe of intelligence." Therefore we may presume that both have a common origin, and that both are products of life. But intelligence, which is a later and a secondary product, is the peculiar property of the higher animals, especially of man. It does not supplant instinct in man, but it modifies it. Intellect is a function which enables us to regard instinct and its operations; it enables us to look around us, to look back and to look forward. By means of it we are able to form judgments, to criticise, to regulate our instinct and to act if necessary contrary to the promptings of our instincts. To quote a Biblical phrase, it is "a light unto our feet, and a lamp unto our path." At the same time so far as the great functions of life and what we call mind are concerned, it is instinct that is fundamental, intelligence which is secondary or accessory. In order to establish this somewhat novel proposition, we must consider instinct in man, and we must distinguish between two kinds of human instinct.

(1) That form of instinct which is common to all animals. In this sense our whole life is instinctive as is shown by the beating of the heart, the functions of growth, respiration, digestion and reproduction. The human infant, like the young of other animals, feeds itself, cries, learns to walk and to play instinctively.

(2) The peculiarly human instincts which are characteristic of man, but which are present in a more or less degree in other animals, are seven in number. For a very clear exposition of them I refer you to Professor Macdougall's book on Social Psychology. These seven primary instincts, although as we shall see not the sole possession of man, are yet so prominent in him, so wonderfully blended and so modified by reason as largely to account for the pre-eminence of the human species. Unlike the more primitive instincts exhibited by man in common with all animals, they do not properly develop their distinctive human character until childhood is past and years of discretion have arrived.

The following is a short description of each of these seven human instincts.

1. *The instinct of self-preservation*, with which is associated the emotion of fear. The emotion of fear is undoubtedly the emotion which induces us to avoid danger and to preserve ourselves from injury and death. It is our constant accompaniment in all the affairs of life; it prevents us from rash conduct of all kinds, and leads to caution, sobriety and humility. It is present throughout the animal kingdom. In young children fear is caused by loud noises, by being held too loosely in the arms, or by the presence of animals or strangers. In almost all animals, including man, the impulse of flight is occasioned by fear, and if the circumstances are sufficiently alarming every living thing that can move runs away. In most animals the impulse of flight is followed by concealment as soon as cover is reached. Fear exercises a profound influence upon the bodily functions.

Corresponding to the impulse to flight we see hurried breathing, violent heart beats and frantic muscular movements or tremors. Corresponding to the impulse to concealment we see pallor, paralysis of movement, slowing of the heart beat and lowered respiration. If flight

is very severe and sudden it may produce convulsions or cause death.

2. *Self-abasement and subjection.*—There are strong reasons for regarding this as a primary instinct. It expresses itself in a slinking, crestfallen behavior, slow movements, a hanging down of the head and a general submissiveness. It is very well exemplified in the behavior of the dog who often approaches a human being with his tail between his legs, or in the manner of a young dog at the approach of a larger, older dog; he crouches with his belly on the ground, his tail tucked away and his head on one side with every appearance of submission. In children the expression of this emotion is often mistaken for that of fear, but the expression of the young child sitting on its mother's knee, in perfect silence, casting furtive glances at a stranger, is not fear but abasement or shyness.

Men and women vary much in the expression of this instinct. When it is temperamentally present we speak of a person as "modest" or "conciliatory" in manner, or as humble or reverent.

3. *Self-display and elation.*—The instinct of self-display is manifested by many animals besides man. Thus the prancing of a well-fed, gaily caprisoned horse and the strutting of a peacock have become proverbial. If you have seen a Highland piper playing his pipes, or a cavalry soldier riding alone through the streets of a town you have seen excellent examples of self-display. Many children, too young to walk or talk, exhibit the instinct amidst the admiring looks and plaudits of the family circle. A little later it is apparent in what is known as the "showing off" of children, in the boasting and swaggering of boys, and the vanity of girls. The instinct is naturally excited both in men and animals by the presence of spectators. It is this instinct that makes life tolerable for many of us by giving us what in Scotland we call a "gude conceit o' oorsels." The joy of life, and the elation of mere existence, supplies us with those

harmless illusions of self-importance which sustain and cheer us on the weary path from the cradle to the grave. We live in hope, too often disappointed, that to-morrow will be better than to-day. We cling to life strenuously and our worst enemy is death, about which we think as little as possible.

4. *The Social or Herd instinct*.—Among all gregarious animals; including man, there is an instinct which compels collectivism or living together in herds or society. This instinct leads to the formation of laws of conduct and ensures by means of severe penalties that each individual shall conform to the rules and standards of the society in which he lives. From this instinct issue the ethical codes, the beliefs, the usages and the laws common to every society of human beings.

5. *Curiosity and wonder*.—This instinct abounds in all species of the higher animals. Cows, horses, dogs, monkeys, and men evince it in an unmistakeable manner. In man, under the guidance of reason, it is the prime motive of civilization, scientific research, mechanical inventions and philosophy.

6. *Pugnacity and anger*.—The fighting instinct is universal in nature. While some animals, notably some dogs and some men, love fighting for its own sake, in the vast majority of instances it is resorted to in the defence of property and rights. Be it ever so abject, a hungry dog will growl if anyone attempts to deprive it of a bone. A hungry child will scream if its meal is interfered with, and a timid animal will fight to the death for the preservation of its young.

7. *The Parental instinct* is a universal and a very strong instinct. It is the bed rock of human society, and ensures the continuation of the species among all the higher animals. From it and the tender emotion which accompanies it spring our sympathy, our charity and the care which we bestow upon the sick, the weak, and the helpless.

These, then, are the seven primary instincts of man:—

(1) Self-preservation, (2) self-abasement, (3) self-display, (4) the social or herd instinct, (5) curiosity, (6) pugnacity and (7) parental or family affection.

Man, then, according to this view, is a bundle of instincts which form the basis of all human activity, and which supply the driving power by means of which all our actions, whether they are good or bad, are initiated and carried on. Take away the impulses coming from these instincts and we would become incapable of activity of any kind. Take for example love, whether sexual, or parental, or social. Could reason dictate the love of the sexes, or could religion stimulate our love for mankind unless these were founded upon instincts inseparable from our nature?

I shall now consider the pathological manifestation of the instincts as illustrated in the more common forms of insanity with which you are all familiar.

Insanity is not one disease but many. For our present purpose, however, it may be divided into two parts. First, that form in which there is congenital malformation of the brain—as in idiots or imbeciles—or gross disease or injury of the brain—as in general paralysis or apoplexy—and, secondly, that form in which the chief symptom is a profound emotional disturbance. With each of these two groups we shall briefly deal in turn.

Congenital absence of the instincts is found in the large class of the mentally defective; it varies in degree from the helpless idiot who scarcely possesses even primitive animal instincts, up to the higher defectives in whom the development of one or other of the primary human instincts has been arrested or perverted.

Permanent loss or impairment of the instincts may occur as the result of apoplexy or of injury to the brain, or of old age. In the majority of such cases we see also a loss of intelligence, but there can be no doubt that in some people, after severe illness, or occasionally after an acute attack of insanity, there is observed an impairment of instinct without any perceptible change in the

reasoning faculties. I do not know whether any of you have read a novel by Robert Louis Stevenson, called the "Master of Ballantrae." I am fond of quoting the following passage from that remarkable book:—"When he was able to resume some charge of his affairs, after a severe illness, I had many opportunities to try him with precision. There was no lack of understanding nor yet of authority; but the old continuous interest had quite departed, he grew readily fatigued, and fell to yawning, and he carried into money relations, where it is certainly out of place, a facility that bordered upon slackness. True, there was nothing excessive in these relaxations, or I would have been no party to them. But the whole thing marked a change, very slight yet very perceptible, and although no man could say my master had gone out of his mind, no man could deny that he had drifted from his character. It was the same to the end with his manner and appearance. Some of the heat of the fever lingered in his veins, his movements a little hurried, his speech notably more voluble, yet neither truly amiss. His whole mind stood open to happy impressions, welcoming these and making much of them, but the smallest suggestion of trouble or sorrow he received with visible impatience and dismissed again with evident relief. It was to this temper that he owed the felicity of his later days, and yet it was here if anywhere that you would call the man insane."

When both reason and instinct are more profoundly involved than in the quotation just given, we call the condition dementia. As you know, dementia may be of every degree from mere facility up to an absence of the primary human and animal instincts. We see this in that most terrible of all mental diseases, general paralysis. Until quite recently medical science, except as regards its gross pathology and symptoms, was ignorant of its cause, and consequently unable to approach the question of its treatment. There is now every prospect that before very long it may be possible to arrest its

symptoms, if not to prevent its occurrence. From the nursing point of view, however, the problem of general paralysis will remain so long as the disease remains.

The examples I have given are fairly representative of the group of insanities with profound affection of the instincts due to non-development of gross disease of the brain.

Broadly speaking, this group of the insanities is incurable. They are, however, capable of much amelioration, and the ameliorating influence belongs more to the sphere of the nurse than to that of the doctor.

Turn again to general paralysis. When the patient is in the earlier stages of the disease, when he is vamping about his wealth, strength or ability, or when in a more advanced stage he is restless, passionate, careless and filthy, his management is a matter of the greatest difficulty.

You may possibly think I am exaggerating because you find no excessive difficulty in managing your general paralytics. Yes, but consider what sort of stir this person, whom you can so easily manage, made in his own family circle and acquaintanceship prior to his being removed to your care; consider also how you would succeed if you had never seen a general paralytic and had had no training in the care of such cases. Now let us consider for a moment how it is you succeed in managing a paralytic so successfully. You do it by humoring him, not by thwarting him, by tact, not by force. To go a step farther, you do not use your reason in the treatment of the patient but your instincts, and your healthy instincts influence and control the patient's diseased and perverted instincts. It is essential that a mental nurse should have healthy instincts, for patients instinctively discover weaknesses. If for instance your combative instinct is too pronounced and not sufficiently under control, force is apt to be too much in evidence in your treatment, and force is in the long run the least successful method of managing the insane. What is true of general paralysis is equally true of all forms of mental disease. I cannot too much impress

upon you that it is character or instinct that exercises the greatest influence in the care and management of the insane. In a way which we do not fully understand, instinct acts upon instinct without the aid of reason, often without a word being spoken. Certain individualities have only to come near us to influence us either for good or evil. This instinctive influence can no doubt be strengthened and perfected by training in the knowledge of our work, by experience and especially by self-training.

The second group of mental diseases which I have mentioned, namely those which depend upon emotional disturbance, are altogether different. They are not dependent upon any definite alteration of the substance of the nervous system—so far as we as yet know—but their chief characteristic is that they are accompanied by strong disturbances of the emotions which affect seriously judgment and conduct. The probable mechanism of this disturbance will be referred to later. In the meantime it will be sufficient to observe that each of the human instincts which has been mentioned is accompanied by a distinct, powerful and peculiar emotion which augments and enforces its operation. These emotions are apt to become in human beings, under certain diseased conditions which we do not fully understand, morbidly exaggerated. When morbid emotion is thus aroused in an individual it disturbs the judgment, affects injuriously the mental and physical functions and causes certain forms of insanity. We see this exemplified in melancholia, mania, and the great group of delusional insanities. Take a typical case of melancholia in which there are the cardinal symptoms of (1) an exaggeration of the instinct of self-abasement, (2) a perversion of the instinct of self-preservation, and (3) a predominance of the emotion of fear, the emotion which as we have seen invariably accompanies the latter instinct. You have never seen a patient suffering from typical melancholia that did not accuse himself of all manner of wickedness, humble himself abjectly and declare himself unworthy to live. That is an exaggeration

of the instinct of self-abasement. You have never had charge of such a patient without being warned that he was suicidal; that is a perversion of the instinct of self-preservation. You have, moreover, observed that these patients are in a state of constant fear of something going to happen, which is the manifestation of the emotion of fear which invariably accompanies a disturbance of the instinct of self-preservation. Turn next to the group of disorders which we call mania and take one of the most troublesome of the groups, ordinary simple mania. The patient is loquacious, egotistical, exceedingly self-satisfied, proud, and restless. He is suffering from an exaggeration of the instinct of self-display, and the accompanying emotion of elation is well in evidence in his conduct, manner, and dress. Added to all this he is intolerant, impatient of contradiction and often quarrelsome, for the instinct of pugnacity is naturally aroused in a person who has the best reasons for supposing that his self-importance is not sufficiently recognized by others. In the two latter instances of melancholia and mania, you know that the intellectual faculties are unimpaired, however they may be implicated secondarily, and it is often a cause of wonder to us how a person otherwise so sensible can so behave and believe such things.

If this is so in mania and melancholia how much more so is it in the third group to which I direct your attention, namely, the group of the pure delusional insanities. You must have seen patients—I have seen scores of them—who were not only intellectually intact, but were men and women who to the last were much above the average in capability and intellectuality who yet believed that their food was systematically poisoned by incredible means; that they were acted on surreptitiously and grossly by invisible enemies; that they are surrounded by clouds of persecutors who uttered vile and calumnious statements concerning them which no one else could hear but themselves. What do we make of the case of a distinguished and intellectually capable man who sat on the staircase

of his own house, night after night, with a loaded revolver, in the hope that he might be fortunate enough to get a pot shot at one of his enemies, or of another man—a scientist of repute—who slept on a bed the feet of which were insulated by glass castors, so that the currents of electricity which the evil machinations of his enemies directed against him might be frustrated. In such cases there is only one explanation. The emotion of fear is exaggerated and the instinct of self-preservation is correspondingly exaggerated. Reason may for a time correct the impulses of the instinct, but emotion, as it always does, ultimately overcomes judgment, while the human mind is so complex that certain morbid trains of thought may co-exist with normal trains of thought.

It seems extraordinary that normal and morbid trains of thought can co-exist side by side in the same mind, but as you all know such is the fact. It is almost incredible that at one moment a man should sincerely believe that he is the omnipotent ruler of the world, and the next moment beg for some trivial favour or complain about some insignificant inconvenience, but so it is. We may not be able to explain this, but I think with a little trouble we may be able to approach a plausible explanation.

Some people have hobbies such as golf, stamp collecting, mountain climbing, or ecclesiastical architecture, other men have fads such as politics, eugenics or Christian Science. I am now particularly referring to that class of people who run their hobbies or their fads for all they are worth; we have all of us met them and as a rule we have found them undesirable. They may be quite estimable, capable people, but too often their hobbies or their fads are by far too prominent for the comfort of others. A state of mind which revolves around a secondary centre of interest of this kind is called a "mental complex." Whether a mental complex is normal as in the instances

I have mentioned, or morbid as in the case of an insane delusion, it possesses certain marked characteristics which are as follows: (1) It arouses emotion, (2) This emotion colours the man's judgment on all matters pertaining to it. For example, contradiction makes him angry; he is not open to conviction; his reasoning power is, as regards the complex, perverted, for his mind is so biased in one direction that his arguments are used not to convince or instruct others, but to support this mental bias from which they really proceed.

The mind of an extreme faddist has in fact become divided into two logic-tight compartments, the larger, his normal self, the smaller, the mental complex forming the fad. This is exactly what happens in the case of the subjects of the large group of insanities we are now considering. The process is called dissociation. It is of course a diseased process, and the emotion which forms the centre of all insane ideas or delusions is abnormally powerful, for as I have repeatedly pointed out in the course of these remarks, one or more of the great primary instincts is at the root of all of these insanities, and we have to deal not with an intellectual but with an instinctive disturbance.

That being so, we have next to enquire whether there is any guide to the treatment from the nursing point of view, which will enable us to help persons who are thus afflicted.

There is one cardinal symptom common to them all which I commend to your careful consideration. The domination of the individual by the powerful instinctive emotion associated with his insanity, has the effect of diminishing one of the principal human instincts—the social or the herd instinct. The patients become indifferent to the ordinary conventions of society, they lose their natural affections, they become careless of dress and of personal appearance; they prefer solitude to society,

and generally their social interests become weak or disappear altogether. In the more pronounced cases, even personal cleanliness and ordinary decency are discarded.

Into the reasons of this marked change, it is impossible here to enter. What I want to indicate is that by means of infinite tact, kindness, example and patience, but above all, by the mysterious influence of the pure and healthy instincts of the nurse, it is often possible, gradually, to restore the repressed operations of the social instinct which restoration when effected is equivalent to the cure of the malady. This is, I am certain, one of the greatest functions of the mental nurse.

If insanity is a disorder of instinct we owe it to another of our instincts that at the present day the insane are so kindly cared for. From the extension of the parental instinct, with the emotion of tenderness and pity which accompanies it, springs the great social function of charity which impels us to protect the poor, the sick and the helpless. We have, most of us, evoked within us the tender feelings of a parent by the sight of a child in distress or by the suffering of one of the lower animals, by great poverty or great sickness. Not only so, but at the sight of cruelty to the helpless, our pugnacious instinct in the shape of moral indignation is aroused against the perpetrator of the injustice. By the sympathetic extension of the parental instinct the nations of Western Europe, under the influence of Christianity, have come to be willing to deny themselves for the alleviation of suffering. We, who are called upon to devote our lives to the care of the insane, sometimes complain of the want of interest taken in our work by the public generally, and we ascribe that lack of interest to defective sympathy. In this we may be wrong for to many sympathetic people suffering, and especially insanity, is so repellant that they cannot bear to look upon it. It has been suggested that the Scribe and Pharisee in the parable may have been as sympathetic

as the Good Samaritan, but that they had not the courage to succor the wounded man.

There are one or two general deductions suggested by the preceding remarks, with which I shall conclude.

It is your privilege to carry on the great work of nursing the insane in an institution with a classical history, founded over 120 years ago by a great man who was one of the first to perceive that the insane had rights in virtue of the fact that they, in common with ourselves, possessed the divine gift of reason. This is my first visit to the Retreat, but it rejoices me to observe that the torch first lighted here by William Tuke is still brilliantly burning.

I do not know whether Tuke would, if he were now living, approve of all I have said; but I feel certain that one of the driving motives of his mission was the recognition of the fact that the insane were reasonable beings. I have referred to reason as "Man's crown," as "a light unto his feet and a lamp unto his path." I might go further and suggest that it is the "Word" referred to in the first chapter of St. John's Gospel, "which became flesh and dwelt with men," but "men preferred the darkness to the light because their deeds were evil." That is, men preferred to follow their instincts rather than their reason. I do not pretend that this is either the orthodox or the usually accepted interpretation of the passage, but it has a place nevertheless.

It is universally agreed upon by leading men in all departments of life that because he possesses this divine spark of reason it is essential to our civilization that the dignity of man should at all costs be maintained. Does not this also apply to the insane? I have endeavored to prove to you that insanity is not primarily or necessarily a disease of the intellect. Hitherto, it is to be feared, we have set ourselves too much to the effort of minimizing the amount of intellect possessed by our patients. I suggest that you should endeavor to discover how much

intellect they possess, and I believe the results will prove astonishing.

If then our patients, however disturbed instinctively, are, most of them, reasonable beings, it behooves us as a sacred duty to do nothing, either positively or negatively, that shall in any way detract from their human dignity.

ACIDOSIS AND ACID INTOXICATION.

An Address at January, 1914, Meeting of Kingston Medical and Surgical Society.

BY DR. W. T. CONNELL,

Pathologist, Rockwood Hospital, Kingston.

We are all acquainted with the incidence of acidosis in diabetes mellitus and the danger of a fatal issue to that disease by acid intoxication, the condition which underlies diabetic coma. But acidosis presents itself in a somewhat wider series of conditions and it is to these I wish more particularly to direct your attention. Acidosis and acid intoxication are of course not synonymous, as a diabetic subject may show a definite acidosis for days or weeks and yet present no symptoms as the body has adapted itself and is producing sufficient bases to neutralize the acid radicles. Acid poisoning begins when the body fails to keep up an adequate supply of such bases and as a result we have the development of symptoms from the disturbance of the acid-base balance of the blood and tissues. As Taylor says, "To establish an intoxication there must be some disturbance of the functions of the body."

What acids do we find in the body and what import have such in producing acidosis and acid intoxication?

(a) In the first place we have the normal sulphuric and phosphoric acids of the protein and nuclein catabolism respectively and the hydrochloric acid so important in general metabolism. These substances are taken in especially in the meats and to a lesser extent in other foodstuffs. They are excreted as the sulphates, phosphates and chlorides of the urine, traces of chlorides being also found in other excretions. Owing to their strong acidity, these readily seize on the stronger bases as those

of N, K, Ca and Mg, and are always neutralized. Except in cases of poisoning by ingestion of considerable amounts of these acids, it is questionable if acidosis could occur from such acids, as the amounts set free by even abnormal tissue catabolism would never be sufficient in amount to neutralize the available body bases. Apart than from poisoning by ingestion of these acids, no definite acidosis traceable to them is known.

(b) Lactic acid is another acid formed in considerable amount in the body. It can be demonstrated in working muscle, and is known to accumulate during marked muscular exertion and to lead to definite symptoms as a result. Lactic acid, too, is a possible product in the combustion of fats and is one of the normal intermediary products in the combustion of the sugars (and starches) of the body. Definite accumulation may occur especially during severe exertion, but as this acid is very readily oxidized by the body, such accumulation is usually temporary only and leads but to a passing acidosis and acid intoxication. No doubt to such accumulation we can ascribe the dyspnoea after heavy exertion and some have also ascribed to it the sense of fatigue, though it does not seem to be the so-called fatigue poison. Thus lactic acid while a possible factor in acidosis and temporary acid intoxication, does not seem to be capable of causing prolonged symptoms of poisoning. Of course more detailed study may alter our views along this line and give to lactic acid a more important niche in the production of acidosis.

(c) Other acids as carbonic, uric, oxalic and the acids of carbohydrate fermentation in the gastro-intestinal tract (such as acetic, lactic and butyric) are never so far as known directly productive of an acidosis. That alterations in the "alkalinity" of the blood seriously influence the holding power of this fluid for CO_2 is well known, and upon this depends certain of the symptoms of acid intoxication. Neither carbonic nor uric acids possess in themselves any toxicity, the amounts of both may be markedly increased without production of symptoms dis-

tinctive of alterations of the acid-base balance. The amount of oxalic acid generated in the body is small, in fact so small as to be negligible as a factor in production of acidosis, while the acid products of carbohydrate fermentation are also comparatively small in amount, are not known to definitely accumulate, and are further readily oxidizable.

(d) The fourth and probably the most important group are the so-called acetone group of the fatty acids, viz., B-oxybutyric and diacetic acids. These acids are usually formed in the catabolism of fat. Chemically it is possible to form them from certain of the sugars and also from the lower amino-acids of the protein molecule. While no doubt in small part derived from the latter source, imperfect fat combustion can be credited with their origin in the vast majority of cases. In the normal catabolism of fat these products are either not formed or if so, the body can burn the B-oxybutyric and diacetic acids and not transform them into acetone except in very small amount, as only traces of this substance can be found in normal urine. (If acetone be taken by the mouth it is not burned, but appears unchanged in the excretions). These acids and acetone appear only to be formed when there is at the same time either lack of sufficient carbohydrate in the tissues burning fat, or under conditions where the carbohydrate cannot be properly held and burnt by the tissues. The liver would appear to be the main organ having to do with the combustion of fat and so long as carbohydrate is freely supplied or retained by its cells, the acetone bodies do not appear. When, as in starvation, the stored carbohydrate fails, then fat must be burned to supply the needs of the body and these bodies appear as intermediary products of its imperfect combustion. The body in many instances does not seem able to further oxidize them and they must then be neutralized and excreted if injury is not to result therefrom. In a certain number of individuals the body tissues even if not supplied with carbohydrate, regain and acquire the pro-

perty of again properly oxidizing the fats and in such acidosis does not arise. In diabetics where the glycogen storage in liver and tissues is deficient, these bodies may appear in the combustion of the fat. "Fat burns in the fire of the carbohydrates" is not strictly true, but this idea gives one an excellent inkling of the process in that normally a carbohydrate supply seems requisite to the cells where fat is undergoing combustion.

(e) In addition to the acids so far mentioned, certain of the lower amino-acids and aromatic oxy-acids require consideration. Our knowledge of the import of many of these is still far from complete, and while they may play a part in production of acidosis, usually lactic acid or acids of the acetone-acid group are more prominent in the same conditions in which these are met with.

How does acid poisoning arise? We never even in cases of distinct acid intoxication find any actual acidity of the blood, using ordinary chemical indicators. The acids are always neutralized, though there may be a distinct lowering in the "alkalinity" of the blood when tested by special means. The neutralization of the acids require the withdrawal of the body bases, and such withdrawal no doubt seriously interferes with the metabolic activities of the tissues. Just how this may affect the cells cannot be stated with certainty, though no doubt it is through its effects on the activities of the cell enzymes. It has long been recognized that alterations in the serum as regards the acid-base grouping does alter the activities of the cell ferments and may even permit these enzymes to attack the cell protoplasm itself (autolysis). There can be no doubt that it is to such withdrawal of the bases up to the point where body tissues can no longer meet the demand, that we can ascribe the onset of acid intoxication. Still it cannot be entirely gainsaid that some of the acid bodies may not have a distinct poisonous quality in themselves. The body, however, does possess a marked capacity through neutralization, oxidation or chemical

combination to reduce practically all such to quite innocuous compounds.

How are these acids neutralized? Primarily by the bases of the body (Na more particularly, then K, Ca and Mg). These bases are found in excess in vegetable foods and in most of our drinking waters, also in the salt and soda used in cooking, etc. Normally these prove sufficient to neutralize nearly all the acid radicles, but when insufficient, NH_3 is provided, Ammonia is the usual end product of the catabolism of the protein nitrogen and as such is nearly all transformed into urea, only about 3 to 5% of the urinary nitrogen appearing as ammonia compounds. In cases of acidosis the urea output lessens and the output of ammonia increases, i.e., the ammonia coefficient of the urine rises. By such sidetracking and utilization of the ammonia, the body has developed a protective mechanism against acid poisoning. But apparently the extent to which the ammonia can be so sidetracked is limited, as it is rare even in cases of marked acid poisoning for the ammonia nitrogen in the urine to rise as high as 40% of the total nitrogen excretion.

Apart from the development of symptoms, or from the complicated tests requisite for judging the "alkalinity" of the blood there are several indicators of an acidosis of threatening character. These are (a) A distinct rise in the urinary ammonia excretion. As this requires the collection of 24-hour samples and a fair knowledge of laboratory technique to correctly estimate, its application in general practice is of limited value only. By such means, however, we have a fair gauge of all forms of acidosis.

(b) As the acetone-acid group are the commonest agents concerned in the production of a definite acid intoxication, the detection of these bodies in the urine affords a ready indicator of such a possibility. The test for diacetic acid by development of a wine red color on addition of aqueous solution of perchloride of iron is the

best and most easily used. As certain drugs such as the salicylates give a somewhat similar reaction they must be differentiated.

As acetone is also excreted into the saliva, the fruity odor of the breath is usually a very noticeable feature of these cases.

(c) In a normal individual the giving of 2 drachms of bicarbonate of soda will render the urine alkaline, while a similar amount in a patient with acidosis will not alter the reaction. Four, six, eight or ten drachms may be required in such a subject before a definite alkalinity develops. Most of such soda is, of course, held by tissues or used to neutralize the acids, the ammonia compounds in the urine tending to fall rapidly. When the deficiency is made good only then does the reaction in the urine become alkaline.

The class of cases in which acidosis or acid intoxication may arise:

(1) Diabetes mellitus. Clinically in following a case of diabetes it is as important to test for acetone and diacetic acid as it is to determine the sugar output. On putting a patient on strict diet (free from carbohydrate) these bodies are almost certain to appear at first. As with normal individuals many diabetics readily adapt themselves to the proper combustion of fats, so that after a week or ten days the output of these bodies lessens and may gradually disappear. Any danger from them meantime can be obviated by the use of alkalies. If these bodies persist it will be advisable to add carbohydrate in some amount to the diet, no matter how well the sugar excretion is being controlled, as prevention of diabetic coma is easier than cure. A certain number of diabetics even with abundant carbohydrate continue to excrete these acetone bodies, that is, there is defect in both carbohydrate and fat metabolism. In such the danger from acidosis may be considered as always imminent.

(2) Starvation. Under this heading comes not only

actual starvation, but all that series of cases in which insufficient nourishment is being taken or absorbed, as occurs in many acute gastric and intestinal disorders, or as the result of fevers or operations. Children are especially easily affected owing to their more rapid metabolism, and may show a urinary acidosis as a result of an ordinary bilious attack. It is in this class of cases that the acidosis is generally overlooked. As a rule it is but an incident as the body bases with or without the aid of ammonia suffice to neutralize the acids and prevent acid poisoning, and on resuming feeding the acidosis quickly disappears. But some of these cases do pass on to distinct acid intoxication, and such cases are more prevalent than we at present recognize.

(3) Another group of cases in which a urinary acidosis is commonly found, are those in which there is fairly extensive destructive disturbance of the liver as a result of certain chemical or bacterial poisons. The best examples are seen in chloroform and phosphorus poisoning, in acute yellow atrophy and eclampsia and in the pernicious vomiting of pregnancy. In (delayed) chloroform poisoning there is found in fatal cases necrosis of the central zones of the liver lobules with marked fatty degeneration of cells in outer zones. Lesions of similar character, but varying in degree, are found in other intoxications mentioned and in some bacterial infections. It would seem, however, that in such cases the interpretation of the appearance of these acids might be that owing to the injured liver having lost its power of transforming ammonia to urea there results a call upon the tissues for acid radicles to neutralize the ammonia, and this is effected through acids of the acetone group and by lactic acid.

In milder grades of liver disturbance, too, there may be an acidosis as occurs in some cases of cirrhosis of the liver and in chronic venous congestion. Definite acid poisoning in such is rare, but lowered blood "alkalinity" may lead to some disturbances of function.

(4) A number of cases are on record where, without previous history of illness or gastro-intestinal disturbance, patients are taken down with symptoms of rather marked gastro-enteritis, such as nausea, vomiting, diarrhoea, faintness, twitching of limbs. The acetone bodies are found present in the urine in abundance even when urine is examined early in the attacks. The condition would seem to be one of interference with fat catabolism in liver as a result of toxin formation and absorption from the intestine, probably aided by acids of carbohydrate fermentation. Such cases are more common in children, may be recurrent, and sometimes end fatally. Such cases respond well usually on clearing the bowel and use of alkalies.

(5) In the *British Medical Journal* of Nov. 29th, 1913, p. 1417, Dr. Lewis, in a clinical lecture on paroxysmal dyspnoea in cardio-renal patients, points out that in such patients there is frequently a much greater degree of breathlessness than could be accounted for by deficient aeration of the blood, the grade of dyspnoea being not proportionate at all to cyanosis, the latter in fact being not infrequently absent. By special methods of analysis Dr. Lewis and his co-workers proved there was a relative acidosis of the blood due to non-volatile acids. Treatment of some of these cases with alkaline carbonates had in certain cases been followed by marked amelioration of the dyspnoea, but of course had no effect on the underlying defect. This article is like all those coming from the pen of Dr. Lewis, worthy of careful study. Since the appearance of this paper, two cases of cardiac asthma in the General Hospital here, under the care of Dr. Third, in which there was marked dyspnoea without cyanosis, have had this symptom much improved with bicarbonate of soda, now being able to sleep in recumbent position. In one of these there was definite urinary acidosis, diacetic acid being present in considerable amount.

Symptoms of acid intoxication: In diabetics these are well known and do not need restatement in detail. Such symptoms may develop suddenly, the patient passing in a few hours into coma which soon terminates in death. On the other hand, there may be clinical evidences of this intoxication preceding by some days the terminal coma. These are such as headache with giddiness or faintness, sleepiness, nausea and vomiting, difficulty in breathing amounting in many cases to marked dyspnoea (air-hunger). The acetone odor of the breath is usually very noticeable.

In non-diabetics the gastric symptoms and the respiratory distress are the most prominent features. There is usually no such somnolence as is so often found in diabetics, but death occurs usually in coma, at times in syncope. The symptoms are best brought out by illustrative cases.

Case 1. A. R., female, 30 years, unmarried. Has had several attacks during past six years at long intervals of "indigestion," which lasted several days, with attacks of vomiting, marked flatulence and eructation of gas. In September last had another of these attacks after being on a fruit diet for purpose of reducing weight. This attack was more severe than previous ones, was accompanied by recurring attacks of vomiting, much gas formation both in stomach and bowels, causing considerable distress. The vomit was highly acid and the stomach region definitely sore. She did not call a physician till condition had persisted for nearly two weeks, as she thought it would pass away as previous attacks had done. Feeling better, she ate a meat meal and within a few hours vomited and was in acute distress. Dr. Anglin, when called, found patient quite faint, complaining of burning in the stomach and eructations of abundant gas and small amount of highly acid gastric contents. Examination showed a definite thickening on left side near ninth costal cartilage and this point was very tender. A diagnosis of probable gastric ulcer with perigastric

adhesions was made. Next day the patient was still more distressed, could not retain any food or medicine, pulse rate was about 100 and patient insisted on windows being kept wide open. There was no evidence of hemorrhage or perforation. The bowels were freely opened by enemas and patient given several nutrient enemas. I saw her, with Dr. Anglin, on the second day after onset, when symptoms were even more exaggerated, distinct air-hunger relieved only by oxygen now being present, as well as syncopal attacks. I was unable to account for her serious condition, nor were two other local practitioners or a Montreal consultant who were summoned. Noticing the fruity odor of her breath I immediately examined a sample of urine, and found it loaded with diacetic acid and acetone, and the reason was at once evident. Soda bicarbonate was given freely by bowel and later by mouth, and inside twelve hours the grave symptoms had subsided. No food could, however, be given by mouth for two weeks, but a small amount of lager beer was found to be agreeable to patient and relieve flatulence, from which she continued to suffer. Liquid peptonoids were also given by mouth and were well retained. Glucose was freely added to the nutrient enemas as readily absorbable and sparing fat and assisting in its proper combustion. The after treatment was that of gastric ulcer, and recovery, while slow, was progressive. Diacetic acid was detectable in diminishing quantities for nearly a week after alkaline treatment was started, the urine not being fully alkalized for four days after treatment was instituted. Albumin in small amount and casts were present at time of first detection of diacetic acid, but only traces of albumin were found in sample twenty-four hours later, and this quite disappeared on the third day.

Case 2: A. H., female, 35 years. This patient I saw in consultation early in October last. She had been suffering from an attack of severe gastric disturbance, which had lasted three days. There had been persistent vomiting, the

vomit highly acid, nothing being retained for more than a few minutes. The patient had become markedly weaker and complained of shortness of breath. When I saw her she was quite collapsed, pulse weak and running over 120, the face pinched and slightly cyanotic. The breath showed a distinct fruity odor. Case 1 having been seen just the previous week, a catheter sample of her urine was at once examined and abundant diacetic acid found. Soda bicarbonate by bowel and stomach made a marked alteration in her condition inside twenty-four hours, the acute distress vanishing though she remained ill for some days. As in the previous case the urine, when first examined, showed besides the acetone bodies fairly large amounts of albumen (2 on Esbach) as well as casts, but these had disappeared on the fourth day after alkaline treatment was instituted, showing that the nephritis was simply part of the acid poisoning. This case is published in full in the Bulletin of the Ontario Hospitals for Insane, January, 1914.

These two cases well illustrate how the acidosis of starvation (deficient nutrition) may develop into acid-intoxication, which would have ended fatally if not recognized. At least two cases of similar intoxication have since been recognized by local physicians (personal communications). I consider the following to have been a case of fatal acid intoxication. The history was briefly submitted with a urine sample by Dr. Hamilton, of Athens: "The patient, a female, had been suffering from typhoid fever for nearly six weeks and was beginning convalescence. For three days before Nov. 30, the temperature had been slightly sub-normal all day, while in the three days' period before this, the highest temperature was 100.2°F. On morning of Nov. 30 the patient vomited a number of times, pulse varied from 90 to 118, temperature 97.6°F. Patient became progressively weaker during the day and lapsed into unconsciousness shortly after midnight and died at 8 a.m., Dec. 1st, that is a little over twenty-four hours from onset of symptoms. The

urine showed albumin when examined Nov. 30, and an average amount was passing during the day, but suppression came on during evening. The pupils during coma were contracted and showed no response to light."

The sample of urine submitted showed a moderate amount of albumin (1 on Esbach) and granular casts and abundant diacetic acid and acetone. Was this uræmia or acid intoxication? I think without doubt the latter, as there had been no indication of kidney disease during the typhoid attack and apparently no alteration in urine output till just before patient became comatose.

In view of these cases I think every physician who has a case of gastro-intestinal disturbance lasting over several days, or in any condition where deficient food is being taken, should take care to watch the urine for the appearance of these acetone-acid bodies, and if necessary take steps to assist the body in their neutralization and hence check any tendency to intoxication thereby.

Treatment of acidosis: The treatment will vary in detail with the cause of the acidosis and the condition of patient, so that obviously only general indications can be outlined.

In a non-diabetic the indications are: (1) Neutralization of the acids by the use of alkalies. Of these bicarbonate of soda is most useful and should be administered by mouth, bowel, subcutaneously or intravenously, if case is urgent. It should be given till urine becomes alkaline and continued till diacetic acid disappears. (2) Food furnishing readily absorbable carbohydrate should be given as freely as possible. Alcohol in some form will usually be found valuable as sparing oxidation of the fats. At first fats in diet should be restricted and to a lesser extent the proteins, though in absence of food decomposition in intestine proteins can usually be used to advantage. (3) The bowel should be kept rather freely opened. This not only checks tendency to acid fermentation of the carbohydrates but accumulation and

decomposition of proteins and formation of lower amino-acids which are possible antecedents of the acetone acid bodies.

In diabetics, when acetone bodies persist, despite dietetic measures, the neutralization of the acid must be effected, the urine being kept either at the neutral line or faintly alkaline. This will almost certainly prevent the development of diabetic coma, but of course has no effect on the progress of the disease in other respects.

A CASE OF DEMENTIA PRAECOX.

BY CHAS. R. GRAHAM, M.D.

Assistant Physician, Rockwood Hospital, Kingston.

A case of Dementia Praecox seldom arouses much interest in the average medical practitioner, or occasions much surprise by its occurrence, but at intervals individuals are found who manifest some peculiarity which renders them conspicuous. Such is the present instance, where the patient, apparently lying in a catatonic stupor, displayed for a time certain symptoms which indicated a psychosis of a more temporary nature, until the disappearance of the factors characteristic of delirium, with the progressive development of suggestibility and apathy, placed the true diagnosis beyond doubt.

Family History.—The only information obtainable in regard to her family, is that her parents died in early life, from causes unknown.

Personal History.—Little information can be obtained except from the patient herself. She is a native of England, but has lived in Canada for the past seven years. She stated that as a child she had measles, but was otherwise healthy. She had a fair education, was unmarried and a domestic by occupation. For the past seven years she has worked in an Ontario city and her employer was very good to her and always treated her with respect. She has also made the statement that she was in a general hospital for some weeks previous to her admission to the Hospital for Insane, and that while there she was curetted, but no trace of such operation can be found.

Present Illness.—The first symptoms of mental instability were observed about the 20th January, 1914, accompanying some physical indisposition characterized by failure of appetite, constipation and sleeplessness.

Irritability of temper was the first noticeable feature, but mental confusion and motor unrest soon became evident, with the development of auditory hallucinations and self-accusatory delusions, so that she believed she could hear people talking, telling her that she had committed a great sin, and in consequence she attempted to smother herself with a pillow. Occasionally she would become reticent and contrary, remaining motionless for hours at a time, during which periods she appeared to lose all control over the natural functions.

Physical Condition.—Patient is a female 20 years of age, somewhat emaciated, but of good color. She was in a state of asthenic fever, with dry parched lips, coated tongue, sordes on the teeth, scanty high colored urine, elevated temperature and rapid pulse. A few moist rales were audible in the left apex, and some tenderness was present over the left ovary. The uterus was much smaller than normal and the knee-jerks somewhat exaggerated.

Mental Status—Attention.—The sphere of spontaneous attention shows considerable variability, for whereas little notice is taken of affairs transpiring around her, occasions have been recorded, on the contrary, in which there is abnormally acute observation, verging on distractability. At no time, however, is there any power of continuous mental application.

Memory.—The power of forming mnemonic impressions has suffered some impairment, consequently the memory images of incidents occurring since the onset of her illness form a rather confused conglomeration, although for prior events remembrance is almost normal.

Orientation.—Her conception of her own personality is fairly correct, and the knowledge of time comparatively accurate, but the recognition of superficial resemblances in other individuals leads to erroneous opinions regarding their identity.

Association of Ideas.—Confusion appears the keynote of her mental condition; little cohesion is present in the train of thought and old ideas recur with a frequency which precludes the generation of anything original, and renders the patient extremely inaccessible to her interlocutor, who, however, may arouse momentary interest and elicit rational answers by short, sharp interrogations, delivered in a loud voice, but sustention of mental application is impossible. Dreams of a very confused type have continually beset her, leaving the impression, as she says of "black and white," and people calling "hell."

Judgment.—Some capacity for logical deduction from simple premises still remains, e.g., "This is a prison because there are bars on the windows," but the limits of activity in this respect are extremely narrow, nor has the patient any knowledge of her own mental incapacity.

Affect—Tone.—Generally the patient manifests little interest in her environment, lying immobile staring at the ceiling and disregarding all attempts to draw her into conversation, while apparently conscious of what is addressed to her. She ignores the speaker and appears absorbed with her own thoughts. Neither is there any trace of affection for her sister, her only relative, but she talks of her apparently without feeling of any kind.

False Sense Perceptions.—Auditory hallucinations of a definite type are continually present. She hears her sister constantly talking with her, in a voice distinctly audible and readily located.

Conduct.—The lesion in the volitional sphere is quite marked, only the most constant efforts on the part of the nurses or physicians can arouse the latent powers. There is an absence of voluntary movement, but involuntary actions, such as rolling her eyes and puckering her eyebrows, are constantly in evidence. Distinct suggestibility is noticeable, the patient imitating any action which she sees portrayed about her; especially is this the case in regard to the emotions, and spontaneous

tears or laughter on the part of the subject follow similar actions in others. Impulses also manifest themselves with some frequency, to such an extent that she is now liable to do things of the most absurd nature. Together with such hyperactivity is found an absolute disregard for the ordinary calls of nature, which necessitates artificial feeding and constant attention.

Progress of Illness.—The patient was admitted to the hospital on February 2nd, 1914, in a very excited condition, and was immediately placed in the continuous bath, where she remained for seven hours. Her appetite was poor, she was constantly talking incoherently, and repeatedly attempted to drown herself. A similar condition persisted for the ensuing six days, during which time the bath treatment with hot packs at night was continued. At this stage hallucinations were ever present and great motor restlessness. On February 8th, however, the patient became much quieter, the baths were discontinued, the hallucinations became much less troublesome, and occasionally she was quite rational. Hot packs and active cathartics were administered until February 15th, when she had a peculiar convulsion, with flushing of the face, rigidity of muscles, etc., after which she cried and laughed alternately, saying that she heard voices. The following day there was considerable unrest, but towards evening she quieted down and passed into a semi-stuporous condition of an apparently catatonic nature, lost all interest in her surroundings, and all volitional powers. This condition gradually became aggravated until alternate suggestibility and negativism dominated all her activities. The patient was by this time practically helpless, with no control over either bladder or bowels, eating and talking automatically, and laughing and crying spontaneously or on suggestion.

Such a case presents some points which render the diagnosis a matter of doubt. True hallucinations, power of temporary partial concentration when addressed

briefly in short, sharp questions, and true fear that she was a sinner, as suggested by the voices, indicated amnesia probably of some toxic origin, but the continuance of the disease and the disappearance of delirious symptoms, with the progressive development of apathy, suggestibility, negativism and impulses rather induces the belief that it is a case of Catatonic Dementia Praecox.

A REVIEW OF THE SYMPATHETIC NERVOUS
SYSTEM AND ITS CLINICAL IMPORTANCE.

THOMAS D. CUMBERLAND, M.B.

Assistant Physician, Hospital for the Insane, Toronto,
Ontario.

During the recent years, there has been wonderful discovery regarding the sympathetic nervous system, and from it great benefit has been derived in clinical medicine. There is still a great deal of this nervous system that is a blank to us at the present time.

The following is a brief account of what has been discovered in the anatomy and physiology of the sympathetic nervous system, with its relation to the ductless glands and its clinical aspects.

The sympathetic nervous system is derived embryologically from the neural crest, which is formed during the development of the central nervous system. The cells from the neural crest migrate at different times and rates to their permanent locations in the adult. They also proliferate during the above process and group themselves into ganglia. Some of the cells, however, do not migrate, but are left behind and will be referred to later.

When complete development has taken place, it will be readily understood that the sympathetic nervous system is divided into two different parts that are called the vertebral sympathetic nervous system and the autonomic sympathetic nervous system.

The autonomic sympathetic nervous system is situated within the central nervous system and is made up of three centres, the mesencephalic, the bulbar, and the lumbo-sacral. From these centres fibres pass out to innervate all the viscera of the thoracic, abdominal and pelvic cavities; the vascular system, the genitalia and the skin with its glands and appendages. Before the fibres

end in the parts which they go to innervate, they pass through a set of ganglia, which are situated in or nearby the parts to be innervated, such as Auerbach's and Meissner's plexuses, which are situated in the wall of the digestive tract.

The vertebral sympathetic nervous system differs from the autonomic sympathetic nervous system and it is made up of a number of ganglia lying on each side of the vertebral column. In the lumbar and dorsal region, there is a ganglion opposite each vertebra, but in the cervical region, the ganglia are only three in number instead of one for each vertebra. The ganglia are all united to one another by process sent out by the cells in the ganglia, thus forming the sympathetic chain.

All the ganglia are connected with the cerebro-spinal nervous system by processes coming out from the cells in the intermedio-lateral tracts, which are situated in each half of the cord in the gray matter, at the junction of the anterior and posterior roots.

The cells making up the intermedio-lateral tracts are the ones that did not migrate, but remained behind as already mentioned. They differ from the cells in the anterior and posterior horns and increase in number opposite each vertebra. The fibres pass out by the anterior roots until they meet the posterior roots and then they pass by the white rami communicantes to the corresponding vertebral ganglia. All the vertebral sympathetic fibres passing out to the cervicovaginal ganglia, however, pass out by the first and second dorsal roots. The ganglia are all united with the central nervous system by afferent as well as efferent fibres and these pass in by the posterior roots to the spinal cord. Fibres pass out peripherally from the cells in the ganglia to all the parts innervated by the autonomic sympathetic nervous system, as above mentioned. But before the fibres reach the part to be innervated, they pass through another set of ganglia, viz., the coeliac and splanchnic plexuses. The fibres from the cervical ganglia, however, are an exception, for they do not pass through a secondary set of ganglia before reaching their destination.

Two important facts to be remembered, are, that the two divisions of the sympathetic nervous system are mutually antagonistic to one another, and all the organs innervated by one are also innervated by the other.

Some of the finer anatomy has been discovered regarding the distribution of the autonomic and vertebral sympathetic nervous systems and at the same time the physiological action of both in many parts of the body, and the following is agreed upon by prominent investigators, notably Gaskell and Langley.

From the mesencephalic centre autonomic fibres pass out by the oculo-motor nerve and the ciliary ganglion to the sphincter iridis to constrict the pupil. This is antagonized by the vertebral fibres which dilate the pupil and come from the cervical part of the vertebral sympathetic reaching the eye by way of the carotid plexus to the superior division of the trigeminal nerve.

The bulbar autonomic centre has cells to represent three nerves; the facial, the glosso-pharyngeal and vagus nerves. The seventh and ninth nerves have autonomic fibres passing out to supply the mucous and salivary glands and blood vessels of the buccal and nasal mucous membranes, as well as the lacrymal glands. They are constrictors to blood vessels and sweat glands, and their action is antagonized by fibres from the cervical part of the vertebral sympathetic system, which reaches the part by the route already described, i.e., by the carotid plexus.

The vagal centre is the most important part of the autonomic nervous system. It has a wide distribution; it sends its fibres to the non-striped muscle fibres in all the blood vessels, viscera and glandular elements contained within the heart, small intestines, liver, pancreas, kidneys and the whole respiratory tract from the pharynx down.

The vertebral sympathetic fibres innervate the same parts and reach them by way of the visceral plexuses, viz., coeliac and splanchnic. The action of the vagus nerve is

the following: Inhibitory action on the heart constricts the coronary arteries, dilates the general blood vessels; inhibitory to the sweat glands of the body; contracts the esophagus; the cardiac sphincter; the stomach, pylorus and gall bladder. The above action is antagonized by the fibres from the vertebral sympathetic nervous system, which have the opposite effect.

The lumbo-sacral centre has autonomic nerve fibres to the genitalia, colon, rectum, anus, bladder and urethra. These autonomic fibres have the following action: The vaso-dilatory to the blood vessels of the rectum, to the external genitalia, contracts the muscles of the colon, rectum, anus, urethra, bladder and external genitalia. The above is antagonized by the fibres of the vertebral sympathetic nervous system and reach the parts by way of the inferior and superior mesenteric ganglia.

Of course it must be understood that the above anatomical and physiological data is not agreed upon by all, but it is by the great majority of experienced investigators, some of whom are already mentioned, and besides it fits in well with the great majority of symptoms produced through the sympathetic nervous system.

Now that we have a fair knowledge of the anatomy and physiology of the whole sympathetic nervous system, it is important to find out if it has any connection with the higher centres. It has been proven to us that the vertebral sympathetic nervous system is represented by a centre in the medulla in the substantia reticularis close to the vagal centre and moreover that this centre is anatomically in continuity with the intermedio-lateral tracts. There is also strong evidence to show that both the vagal and sympathetic bulbar centres are represented higher up in the basal ganglia of the brain, i.e., the optic thalamus and corpus striatum, for every one is familiar with the symptoms and signs produced by emotions and moods, e.g., fright, fear, shock, etc., when we blush, turn pale, perspire, shudder, shiver and the well known pilo-motor

reflex or goose skin becoming well marked; salivation and dryness of the mucous membrane, etc.

It is also a recognized fact that the optic thalami are the centres of emotions and moods and therefore they are the higher representatives of the vertebral and autonomic bulbar centres, for the above signs and symptoms of emotions and moods are produced through the sympathetic nervous system.

Another proof that the optic thalami are higher representatives of the bulbar centres, is that all the stimuli that evoke emotion pass into the brain by way of the auditory and visual paths and the place where the afferent impulses pass over to the efferent impulses is in the mid-brain, which is definitely above the bulbar centres and in the region of the basal ganglia. It has also been proved by Henry Head and Gordon Holmes that each optic thalamus looks after each half of the body independently of the other and that each may respond differently to the same stimulus which may produce different manifestations on each side of the body. They also claim that the optic thalami are under the control of the cortical cells and that the cortex is connected with the optic thalami by nerve paths and that any disturbance of these paths or of the cortical cells cuts off the control of the cortex over the optic thalami and thus gives rise to the emotional disturbances with all its ill-effects upon the body; thus any organic change in the above paths or cortex would cut off the control. The cortical cells can also be thrown out of function temporarily by stimuli coming in by the sense organs, i.e., visual and auditory by the conversion of potential to kinetic energy as explained by Crile in his recently published article on "Kinetic Theory of Shock."

One can readily understand from the anatomy of the sympathetic nervous system with its definite connection and relationship to the central nervous system, that lesions of a functional or destructive type may produce signs and symptoms by involvement of the autonomic and vertebral sympathetic nervous system.

The following are some of the signs and symptoms due to a functional or destructive process in the central nervous system, and we will begin in the brain and work down, taking up the destructive lesions first.

In some cases of hemiplegia due to hemorrhage into the internal capsule, permanent goose skin has been noticed on the affected side of the body, also in cases of hemiplegia in children, vaso-motor paresis of the affected limbs have been noticed. The above is no doubt produced through the sympathetic nervous system.

Cases of thrombosis and embolism of the branch of the inferior cerebellar artery which supplies the medulla have been recorded. As the result of this thrombosis, this portion will suffer from ischaemia and will produce characteristic eye symptoms, viz., ptosis, myosis and enophthalmos with or without vaso-motor or sweat disturbances over the face, neck and upper part of the trunk. Now exactly the same signs and symptoms can be produced by a lesion in the cervical part of the spinal cord or destruction of the vertebral sympathetic cervical nerve itself. Sometimes preceding the paralysis there are signs of stimulation with the opposite signs, viz., mydriasis, exophthalmos and widening of the palpebral fissure. The above shows distinctly that the vertebral sympathetic nervous system is represented in the medulla.

The continuity and function of the sympathetic vertebral cervical nerve can be determined by cocaine instilled into the eye which has a stimulating action on its nerve endings in the dilator muscle of the iris, causing dilatation.

Lesions of an inflammatory and traumatic nature, also new growths and hemorrhage of the spinal cord frequently involve the intermedio-lateral tracts and definite vaso-motor and trophic changes take place, which are only too well known in cases of transverse myelitis and compression paraplegia. There is also a disturbance of the sweat glands which has been noticed and this is frequently demonstrated by injecting pilocarpin and at

the same time raising the clothes off the body by means of a cradle and if the intermedio-lateral tracts are involved, sweating will occur up to a certain level, depending upon the level of the lesion in the intermedio-lateral tract. The above test is frequently done at the present time in clinical work. A valuable case of anterior poliomyelitis has been reported, in which there was complete anidrosis of the two lower extremities and at autopsy showed hemorrhage into both intermedio-lateral tracts.

Lesions of the peripheral nerves do not show many signs and symptoms indicating involvement of the sympathetic nervous system, but it is recognized that the crises of tabes is due to involvement of the sympathetic visceral plexus to the affected organ. Some forms of angina pectoris are due to contraction of the coronary arteries, etc.

When we come to the functional disturbance of the central nervous system, we have only to go to the heart for a good example. We are all familiar with the fast and slow pulse in our patients in the hospitals for the insane, also in cases of neurasthenia and hysteria and those of nervous temperament.

Functional disturbance of the vagal centre is very common and Sir Wm. Gowers speaks of the condition as the "Vaso-vagal" attack. He compares it to epilepsy on account of the epileptiform discharge of the vagal centre and its periodicity. It often begins with an epigastric aura, such as a feeling of discomfort quickly followed by a rapid and forcible action of the heart with slight disturbance of rhythm, feeling of suffocation and difficulty in respiration. They become very apprehensive and afraid that they are going to die, etc. The extremities become cold and blue and mottled in appearance, trembling of the body, grinding of the teeth and restlessness. The above condition may last for a few minutes or may be prolonged over many hours. It may follow out the above description completely or only partially. The above description is due to loss of control of the vagal centre

over the parts innervated by the vagus nerve. Now the opposite condition is frequently seen, i.e., over-action of the vagal centre and thus increased tone of the parts innervated by the vagal nerve. This condition is already spoken of by many as vagotony and the patient is called a vagotoniker. These patients present a very characteristic picture. See case report No. 1.

A vagotoniker is one who shows signs of increased functional tonus and increased susceptibility to pilocarpin and insusceptibility to epinephrin. A pupil test has been worked out for cases of vagotony. Through forced inspiration the pupil dilates and contracts on expiration. At the same time the pulse is increased on inspiration and decreased on expiration. The above test invariably indicates vagotony, but it often fails, however, if tried too often in rapid succession. The signs and symptoms produced through the sympathetic nervous system are most likely due to insufficiency of one system or hyperplasia of the other, or hypofunction of one system or hyperfunction of the other.

High tonus in one system is accompanied by increased irritability of the other and this antagonism also proves true to the pharmacodynamic test, i.e., individuals susceptible to epinephrin are only slightly susceptible to pilocarpin and vice versa.

The pharmacodynamic test is as follows:

Sympathicotony is evident by a positive reaction to epinephrin, e.g., onset of chills, arrest of secretion, mydriasis, tachycardia, severe headaches and vertigo (due to great cerebral pressure). Vagotony is evident by a positive reaction to pilocarpin, increase of secretion, flushing, myosis, bradycardia, syncope, later due to cerebral vasodilatation. Vagotony can also be confirmed by a patient's tolerance for large doses of atropin for a prolonged period before the physiological effects are obtained. An important fact to be remembered just here, is that the whole of the vertebral or autonomic sympathetic nervous systems

may be involved or only part of each system in organic and functional disturbances.

To understand thoroughly the functions of the sympathetic nervous system, it is important to understand the close relationship existing between the sympathetic nervous system and ductless glands.

It is well known that the cortex and medulla of the suprarenal glands differ physiologically and histologically. The medulla of the suprarenals is made up of cells that take on a specific stain to the chromic acid salts and has been called the chromaphil tissue. This tissue originates embryologically from the same place as the sympathetic nervous system and besides the chromaphil tissue is also found in other parts of the body besides the medulla of the suprarenals, viz., the sympathetic ganglia and plexuses, kidneys, ureter, accessory suprarenals, prostate, ovaries, also a strip down the front of the aorta known as the "aortic body." The chromaphil system is widespread; is not only related to the sympathetic nervous system embryologically, but also histologically and physiologically.

The chromaphil tissue secretes a substance called epinephrin, which has an action on the nerve endings of the vertebral sympathetic nervous system and its action upon this system corresponds to the results obtained by stimulating the nerve fibres of the vertebral sympathetic nerve system experimentally.

It has no action whatever on the autonomic sympathetic nervous system and besides the result of stimulation of the autonomic nerves in no way corresponds to the result produced by injecting epinephrin, but there is some substance in the body that has a specific action upon the autonomic nerve endings, similar to that of epinephrin upon the vertebral sympathetic system, but at the present time this has not been discovered.

Drugs differ in their action upon the two divisions of the sympathetic nervous system. Some stimulate the vertebral sympathetic and inhibit the autonomic, e.g., cocaine and atropin; others stimulate the autonomic and

inhibit the vertebral, e.g., morphine and chloral. A large number of drugs have been worked out in the above way and the results are tabulated in many of our medical journals.

The two specific substances in the body, i.e., epinephrin for the vertebral sympathetic and the unknown substance for the autonomic sympathetic, have a stimulatory action for their particular system and have a mutually antagonistic action upon the opposite system and at the same time each compensates the other. There is a close relationship between the ductless glands and it is no doubt maintained by the close relationship existing between the internal secretions and the two divisions of the sympathetic nervous system.

There are many signs and symptoms of disturbance in the body not referred to in this article, but enough has been said to show the amount of work already accomplished and its importance in clinical medicine, and also the vast field that is open for further research work at the present time.

The following are a few cases observed :

Case No. 1.

Male, 38 years. Born in Switzerland and employed here as an attendant. He complained of abdominal distress, which bore no relationship to meals. Obstinate constipation and sleeplessness. Examination did not show any symptoms of organic disease of the body. There was tenderness in the epigastrium, pylorus was palpable and tender to touch. Marked salivation, perspired freely, and anorexia becoming well marked; patient lost weight, was easily excited and very active and alert in his movements. Pulse sixty-four and increased to eighty by giving grs. 1-100 of atropin. He had a similar attack about a year ago, but thought he had gall stones. He was operated on at that time, but nothing abnormal was

found, except his appendix, which was removed. During the present attack, he again thought he had gall stones, Patient was very much relieved by bromides and syrup of codein. Diagnosis, "Vagatony"

Case No. 2.

A patient in the Toronto Hospital for Insane. Male. Nineteen years. Catatonic dementia praecox of the depressed form. He suddenly became cyanosed in the face and extremities, also to some extent over the rest of the body. The cyanosis was very pronounced as in patient with congenital heart defect or a child with whooping cough preceding the coughing spell. Patient grew restless and apprehensive; marked twitching of the body and movement of the arms, legs and head; grinding his teeth; slight difficulty in respiration. Pulse one hundred and forty-six and slightly irregular. The attack lasted for about twenty-four hours and patient went back into a stupor again. Diagnosis, "Vaso-vagal" attack.

Case No. 3.

Male, 23 years. A patient in the Toronto Hospital for Insane. Imbecile. He was very much depressed. He was dressed and walking about the ward when he suddenly became cyanosed and his signs and symptoms resembled case number two very closely, only the duration was about thirty-six hours. Diagnosis, "Vaso-vagal" attack.

Case No. 4.

Age 42 years. Born in Scotland. Suddenly became cyanosed and the signs and symptoms resembled very closely cases number two and three. The same diagnosis.

The above are only examples of the many cases that are occurring in our hospitals and private practice and upon analysis correspond to the signs and symptoms that would be expected by disturbance of the autonomic or vertebral sympathetic nervous system.

"A PSYCHIATRIC PEN PHOTOGRAPH"

From the Hospital for the Insane, Mimico.

By C. L. DOUGLAS, M.D., ASSISTANT PHYSICIAN.

The following case, admitted to this institution lately, has proven quite interesting, and I am submitting it to the consideration of the readers of THE BULLETIN.

A.B., aged 55, married, Canadian, Roman Catholic, was admitted on the 1st of January, 1914.

He was, previous to his retirement six or seven years ago, a prosperous farmer; but, on account of persistent asthma and failing health, decided to retire, and since that time has lived in the town of C. I saw him on January 5th, and in conversation with him obtained the following information:

Family History.—Father died at 92 years, cause of death being senility. No history of excessive use of alcohol or tobacco, serious illnesses or mental peculiarities.

Mother died at 60 years, supposed cause of death being broken compensation. She was ill three or four years before she died.

Brothers—three, alive, ages 60, 58 and 45 years. The eldest, according to patient, had an attack of mental depression lasting some time several years ago, and the youngest has been an invalid for over 15 years, and at present shows signs of mental deterioration. The second brother has been ailing for a time, the cause, the patient thinks, being due to certain excesses while young.

Sisters—one alive, aged 50 years, a spinster, has been ill a few years. Three sisters dead. One died in infancy, cause not known. I was unable to elicit any information concerning the other two sisters.

No relationship between parents, and no history of tuberculosis or other chronic diseases in the family.

Habits.—Patient has used alcohol sparingly all his life, and tobacco to excess since 10 years of age. There is no history of venereal infection or exposure to it, but patient admits he masturbated excessively as a young man.

Previous Illnesses.—Patient had the usual diseases of childhood, from which he made satisfactory recoveries. When a small boy he tells me he had recurring attacks of chills and fever, probably malaria. When 15 years of age he was subject to severe headaches, frequently without apparent cause. About this time he had two attacks of "inflammation of the bowels." Since about 20 years of age he has been troubled with asthma and frequent "colds in the head." This, he says, is hereditary on his mother's side, but it has not troubled him much since he stopped farming. He has tried various cures without success, and just previous to his admission here he was using a proprietary medicine, which, he says, was of a very depressing character, and in part he believes accounted for his present condition. During the past eight years he has had frequent urination at night. This has become worse during the past eighteen months. He says that he believes it is due to his nerves, and that it is now beginning to affect him during the daytime. Whenever he is especially worried or excited he experiences a desire to pass his water, but is unable to do so. This patient has always been of a nervous temperament and inclined to worry excessively over his work, his financial affairs and the opinion people had of him.

Personal History.—Birth and gestation were normal; in infancy no abnormalities as far as can be ascertained. He commenced school at 5 years of age and attended until 15 years, at which time he was in the third book. He tells me he never liked school, and was not an apt scholar. He says that he found his work at school very hard, especially the memory work, and for this reason he played truant whenever the opportunity presented

itself. After leaving school he commenced work on his father's farm, and since that time until about seven years ago was an active and quite successful farmer. His two older brothers left home while he was still quite a young man, and the responsibility of managing the farm fell on his shoulders. He says that he has always worked hard, never taken much pleasure, and has never been inclined to be sociable with his neighbors or relatives. He is a man who has read very little, and has taken no interest in politics, either local or provincial. He married at the age of 31 years, and has no family.

Present Mental Illness.—About eight years ago patient first noticed the onset of his present illness. He says that he felt himself becoming confused when he endeavored to carry out business deals. His head felt as if something had a grip on it, he was very absent-minded, and his memory began to fail. He told me that he would remember starting to do a certain work, for example, carrying water from a well near-by to the house, and then would "come to," as it were, finding himself sitting on the well curbing, smoking or reading. He thought this was due to the excessive use of tobacco, and therefore stopped using it for a time, but found that he did not improve, and recommenced. This condition worried him considerably, and he decided to leave the farm. He described the feeling in his head as being like a continual cold, and said that he had a ringing in his left ear, although he seemed to possess no actual hallucinations of hearing. At first this confused feeling would leave him for a time and return at varying intervals. Because of this confused feeling he felt he was not sure of his accuracy in computing interest, etc., and therefore always had some person whom he could trust go over his work and make sure it was right. This distrust of his own ability made him very suspicious of those around him, he told me, because he was afraid they noticed that he was failing mentally, and, taking advan-

tage of it, would "do" him. After moving to C. he improved for a time, but always had the idea that people were standing aloof and that they thought him peculiar and stingy. The fact that he had no steady occupation, that he was unable to be free and friendly with people and, to use his own words, "give everyone a good time," worried him considerably. He says that he began to lose flesh and sleep. This condition continued to about a year and a half ago, when he was sent to a sanitarium in Montreal. He remained there three months, improved slightly, then returned home. Last summer, at his brother's solicitations, he again returned to this sanitarium for a short time. However, he did not improve, but believed that the attendants there were persecuting him. The result was that he returned home, where he became slightly better for a time. The present attack manifested itself by insomnia, loss of flesh and delusions of persecution by his wife, sister and brothers. He seemed to think that his brothers were working "some game" on him in order to get controlling interest in his property. He also thought that the Orangemen in his home town were conspiring against him. He at times was very excited, restless and destructive, at other times much depressed. He threatened violence towards his wife and sister and various residents of C., whom he believed were conspiring against him.

Mental Examination.—No history of hallucinations or illusions can be obtained. His attention is fairly good, as he can attend to conversation well, answer questions readily, and seems to comprehend the purport of the matter under discussion. He can add and subtract, but does it slowly. His memory for remote and recent events is fairly good. Patient knows the month and the date of the month, but is disoriented as to the day of the week. He thinks that he is in Toronto and can explain correctly his road home. He believes that two patients

in the same ward are certain men (naming them) whom he knew in C. He mistakes the identity of one of the attendants, stating that he is a man whom he knew well in C. He thinks also that he has seen the attending physician somewhere before. He can describe men whom he knew before he came here; for instance, his family physician. Train of thought is retarded, and he is apt to be confused when being questioned closely. Possesses delusions of persecution as set forth in history. He believes that certain patients in the same ward are hired by this Institution to put this "mimicking game" on him. He says that he is satisfied that this should be the case, because he believes that this is the way he must be cured of his mental illness. He is inclined at times to be good-natured and fairly cheerful, but at other times is sullen and suspicious. His insight into his mental condition varies. He understands his case at times, realizes that he is here for treatment, and acknowledges that his delusions of persecution by his friends and relatives are merely mental fabrications. Again, when he is depressed, he believes most absolutely in his delusions.

Physical Examination.—Patient is at present fairly well nourished, weighing about 125 pounds. His head is well formed. Pupils react sluggishly to light and accommodation. His ears are well formed and regular, and the lobes attached. He is slightly hard of hearing in the left ear. He has a kypho-scoliosis in dorsal region, but otherwise spine is normal. There are no palpable lymph nodes or other signs of lues. The lungs are emphysematous throughout. Heart is normal and blood pressure 115. Patient has a right side incomplete inguinal hernia, and although there is a history of chronic nephritis the urine shows no abnormalities. Rectal examination shows an enlarged and tender prostate gland. Reflexes are brisk, but otherwise normal. Sensations and co-ordinate movements normal.

The following are extracts from clinical notes made on patient's condition from time to time:

Jan. 6th.—Last night patient complained about his diet and asked for extras which were unobtainable. He became so violent and abusive that it was necessary to confine him to a single room for a while. Later in the evening he was returned to the dormitory, and there attacked a fellow-patient because he removed some clothing from his bed. This morning he still persisted that he was being persecuted at home and felt that some game which he could not fathom was being worked on him. He thought that probably he was not acting lively enough and spending his money as he should. He told me that he had no time to do anything else but endeavor to oppose this game, and the result was that he could neither eat nor sleep, lost flesh and became mentally ill.

Jan. 15th.—Patient accused three fellow patients of mimicking him and saying unpleasant things about him. He was unable to tell me just what they were saying, because their conversations were muttered. He says, judging from their actions, he thinks they must be insane, but fails to realize that he himself is peculiar in any way. He refuses to write home, and although he said he was much worried over the fact that his wife had no money he refused to take steps to provide it for her.

Jan. 17th. Very much excited this morning, threatening to prosecute the attending physician if he did not see that he was given his liberty by night. As delusional as ever.

Feb. 6th.—Wrote his first letter home. It was well composed, quite sensible, and cheerful in character. Patient is gaining in weight. Seems quite rational and contented.

Feb. 13th.—Complained of his food again. Accused other patients of taking it from him and giving him no opportunity to eat. This, I find, is false. He also said

that he had stopped using tobacco, and when asked why, said that he believed the supervisor, from his actions, wished him to stop. He says that his bed is not fit to sleep in, that he has not sufficient clothing, and that he should be at home, where he believes that he would receive better treatment.

Feb. 21st.—In conversation with this patient this morning, he said that he could look back over the past six or seven years and realize where he himself was to blame for the delusions of persecution concerning the attitude of his friends and relatives. He tells me that now he is thankful indeed for the interest they have shown in him, and he wants to return as soon as possible to his home.

Feb. 25th.—Attempted to elope yesterday. When questioned regarding it he said that he realized that he is only harming himself by these attempted breaks and would endeavor to control his impulses in the future. Wasserman reaction negative in the blood.

Feb. 28th.—Patient complained of dizziness this morning and was treated for the condition. He is quite cheerful and seems to have recovered entirely from his recent depression and restlessness.

March 10th.—Patient still remains cheerful and is quite rational in his conversation. He is gaining flesh and is assisting with the work about the cottage. He promised this afternoon to write to his wife telling her about his condition and treatment here.

In summarizing this case probably the three most important points are:

First: The marked lack of hereditary nerve force in the whole family, as shown by this patient's inaptitude at school, his mental peculiarities as a young adult, and also the mental illness which each of his brothers suf-

ferred from in the prime of life. Secondly: The patient's varying insight into his mental condition while confined here, this being influenced very much by the degree of depression from which he suffered. Thirdly: The concrete manner in which the patient describes his delusions of persecution, they being an outgrowth of his own distrust of ability to carry on his work.

NOTE ON SALVARSAN IN THE TREATMENT
OF SYPHILIS.

DR. W. T. CONNELL,

Pathologist, Rockwood Hospital, Kingston.

As syphilis is not a common disease in our smaller Canadian cities, but few of us, so situated, gain any extensive acquaintance with its therapy. Having during the past eighteen months administered personally, or in association with Dr. Wm. Gibson, salvarsan (or neo-salvarsan), seventy-five times intravenously to some thirty-eight patients, I have thought it well to shortly outline the results of such a limited series. The patients have represented all stages of the disease, from the early primary sore to advanced tabetics and paretics.

In primary, secondary and in the cutaneous tertiary manifestations, the results of the primary intravenous injection can only be described as remarkable, as open sores quickly heal, eruptions fade and constitutional symptoms if present disappear, in from six to twelve days. In fact, one such dose accomplishes as much in this period as full dosage of mercurial preparations would achieve in from six to twelve weeks. This is not only pleasing to the patient, but becomes a factor of much importance to those with whom the patient may come in contact, because it shortens to this marked extent the period during which a patient in the efflorescent stage is a grave danger to others. But salvarsan in single dosage is rarely a complete cure, as was first claimed for it, hence salvarsan alone, or, at least, in single dosage, is not sufficient treatment. Salvarsan is now known to act, not directly as a germicide, but by "fixing" or "sensitizing" the spirochaetes so that they can be quickly destroyed by the tissue cells or fluids. As these spirochaetes are often quite deeply situated in fibrous tissue proliferations, scar

tissues or sheaths of nerves (or in paretics in brain tissue), all tissues with limited lymph supply, such spirochaetes may escape fixation and destruction and form nuclei for fresh development. Hence it is advisable to have patients put on mercurial treatment at once, so that when in the absorption of the syphilitic infiltrations or lesions if unkilld spirochaetes are uncovered, the mercury would destroy or at least limit their multiplication. To assure more complete sterilization, a second injection after four weeks is always advisable, and in most recent cases of primary and secondary lesions seen has been insisted upon, mercury being then continued for at least four months. Patients are further advised that to be certain of the eradication of disease a Wassermann test should be made of their blood one month after discontinuance of mercurial treatment, when a negative reaction may be considered evidence of cure. Only three cases have so far lived up to this advice, two of them showing a negative reaction, the third showing a positive reaction. This latter case, not presenting any clinical signs, would not take further treatment at the time, but has lately been referred for treatment owing to development of cutaneous lesions of late secondary type.

In two cases of congenital syphilis, one aged three, the other ten, the effects of two intravenous injections can only be classed as fair. The symptoms ameliorated in younger child, which was then removed from the hospital, and further progress has been lost sight of. The older child showed cerebro-spinal lesions, and while symptoms have shown a decided improvement, there had been sufficient permanent injury done before the treatment was instituted that a definitely satisfactory result could scarcely be expected. This case is still under observation. The experience of others has shown that such cases require repeated dosage owing to the difficulty (some say the impossibility in the cerebral tissue) of getting the remedy in contact with the spirochaetes to be destroyed.

In tertiary lesions of the bones and viscera, repeated dosage is essential to secure results.

The work of Noguchi and Moore, Marinesco and others having definitely shown that tabes and paresis are syphilitic lesions and that spirochaetae are present in the brain or spinal cord as case may be, has stimulated treatment of these diseases with salvarsan. In two cases of tabes, following the use of salvarsan, there has been amelioration of symptoms of progressive character, e.g., cessation of girdle and lightning pains, disappearance of crises and apparently a stationary stage arrived at. Neither of these cases has been under observation long enough to note the ultimate outcome. Further, in both these cases there has been difficulty in getting the patients to adhere to the treatment prescribed, viz., two doses of salvarsan at four-week intervals, mercury and potassium iodide in small doses continuously, with a repetition of the salvarsan at six months' intervals, or if any evidence of progression of lesions.

At Rockwood hospital, salvarsan has been employed in the treatment of paresis. In three cases very hopeful results have been secured in that the patients have shown practically no mental deterioration for periods of from six months to one year. Further, these patients have been not only less irritable but have kept in good physical condition. It is altogether too soon to speak of results in these cases, however, as another year or two must elapse before a full report can be issued.

So far we have had no alarming symptoms following on the administration of the drug. The fresh distilled water and normal saline used are sterilized on the day of use, and this, no doubt, is the main reason for such absence. Several patients have complained of nausea and loss of appetite for meal following the injection; one complained of a diarrhoeal attack of mild character, and one of a distinct chill. The latter was a patient with extensive secondary skin rash and similar involvement

of mucous membrane of mouth and throat. Apart from the children, it has only been necessary to cut down on the vein four times, as the veins can nearly always be satisfactorily entered by puncture. Salvarsan intravenously, with mercury by any of the methods of administration, is undoubtedly a marked advance on mercurial treatment alone, shortening the clinical course, reducing the seriously infective period, and, when systematically employed, more certainly eradicating the disease.

CLINICAL RELATIONSHIP BETWEEN KIDNEYS, HEART AND ARTERIES.

BY CHAS. E. McLEAN, M.D.C.M.

Assistant Physician, Hospital for Insane, Brockville.

The presence of chronic disease of the heart, arteries and kidneys, appearing simultaneously in more than a few cases under my observation of late has led me to believe that there exists without doubt an alliance of some import between these organs, when diseased, or otherwise rendered unable to properly perform their true physiological functions.

As to relationship between heart and arteries, it can easily be seen that a pathological condition of one might as easily be a pathological condition of the other, for example, a deposit of lime salts from the blood stream might be made in the valves of the heart, as conveniently as in the walls of the arteries. This leads to sclerosis and we find a hardened valve or a hardened artery or more probably both. The calibre of the vessels is diminished, they become tortuous, the rate of blood flow is interfered with, the heart suffers in consequence as must other organs. The kidneys become small and fibrosed, chronic interstitial nephritis. The cirrhotic change, however, is not always equalized, one organ usually suffering more than the other, and thus we are not able to point to the one of the three organs primarily at fault. Some pathologists tell us that the resulting cardiac hypertrophy is due to difficulty with which the circulation is maintained in the cirrhotic kidneys, others say it is due to the altered condition of the blood, and still others that it is the result of irritation of circulating toxins from the kidneys, they having a direct effect upon the musculature of the heart and arteries. Irritation of adrenal glands, and the resulting over-secretion of adrenalin, is credited

with raising blood pressure sufficient to bring about a further cardiac hypertrophy.

In lung disease, most strain is exerted on the right side of the heart and it is here we see its results, viz., hypertrophy. In arterio-sclerosis, the left ventricle has, by watching a number of cases, been found to show most, or in some cases the only over-growth of muscle tissue, while nephritic cases, although a few showed hypertrophy of left ventricle above, the majority showed hypertrophic involvement of both right and left sides, the left being most marked.

While many theories are advanced and while many experiments are quoted to strengthen these theories, it is doubtful if any single case may be found to account for all hypertrophies of the heart, since the conditions vary so in different individuals. Heart, arteries and kidneys each have individual duties to perform and each one has an important bearing on the other, and as a common enemy attacks one, the others simultaneously suffer.

A case in point is one of special severity, and one which proved quite interesting.

Mr. D. B., admitted Nov. 19, 1913, aged 56 years. The family history of this patient does not present much of value as regards the case. It is, however, to be noted that one maternal uncle had some form of paralysis, the exact nature of which could not be ascertained. One cousin had been confined for some time in a hospital for the insane. Several of the near relatives were also addicted to the excessive use of liquors.

The birth of this patient was attended with some difficulty. He was, however, robust and healthy as a child and succeeded well at school during the short time he attended. When he became of sufficient age he apprenticed with a blacksmith and up to the time of coming here followed that occupation.

He gives an alcoholic history during this time, and for forty years of his life he took great amounts of whiskey and gin. Four years after cultivating the habit and just

prior to coming to our institution he made a practice of drinking two and one-half flasks of white wheat whiskey each day. Sixteen years ago he noticed his mind somewhat confused and attributed it to abuse of this drug, but seemingly could not get along without it. He has grown since that time progressively worse until his health compelled him to enter a hospital in Cornwall for treatment in September, 1913. While there he became unmanageable and was accordingly transferred to our care. Although always impulsive and more or less erratic, he became irritable, clouded, greatly confused and even threatened violence to other patients. He suffered from insomnia, loss of appetite and flesh, and with pains over entire body much like those of an alcoholic neuritis. His eyesight grew gradually weaker, and his writing was poorly executed, due to unsteadiness of his hand. Dyspnoea was marked.

"Although nothing very definite has been brought forth to show a direct influence of alcohol in producing chronic interstitial nephritis, it would seem that alcohol is an unquestionable, important factor in the production of this condition, if not by the direct action of alcohol on the kidneys, indirectly through the perversion of the gastric and hepatic functions, through induced faulty metabolism through secondary digestive derangement, through exposure and excesses, the result of over-indulgence." (Osler.)

Urinalysis here shows:

Quantity—Greatly increased.

Color—Cloudy, amber.

Odor—Disagreeable.

Sp. gr.—1.015.

Reaction—Acid.

Urea—14 grains to 1 ounce urine.

Mucin—Indican and bile salts present.

Albumen—6 grammes to the litre.

Sugar—Absent.

Acetone—Small amount.

Haemoglobin—Traces.

Epithelial cells—Great quantities.

Blood—Present.

Casts—Hyalin and large and small granular.

Amorphous, urates in quantity.

PHYSICAL EXAMINATION.

Heart—Examination showed it much increased in size, the apex displaced downward and to the left, reaching nearly to the sixth interspace and to the left anterior axillary line. The heart impulse at apex was feeble and a sharp systolic murmur was well heard over apex and transmitted to axilla and scapula. Some accentuation of the second pulmonic. Arythemia present. Dyspnoea, cyanosis and dropsy alarming.

Arteries—Tortuous, walls thickened. Temporal arteries plainly visible. Tension high, giving cord-like feel.

The mental symptoms while probably most dependent on the poor arterial blood supply, were probably also due to the toxins circulating in the blood stream, the result of the nephritis. Diuretic and stimulative treatment in this case was of no avail and the patient died January 9, 1914.

POST-MORTEM.

External Examination—Erythema of abdomen and exterior surface of thigh, pressure ulcer over sacrum, gangrene of toes, due to retarded and static circulation, ulcerated scrotum.

Internal Examination:—

Scalp—Jaundiced.

Skull—Thickened.

Dura mater—Thickened, adhered to skull.

Arteries at base—Sclerosed.

Cerebrum—Convulsions somewhat flattened.

Sulci—Not marked.

Neck and Thorax—Chest bulging. Emphysematous, barrel shaped. Adhesions of left lung and pleura anteriorly and externally.

Lungs—Pneumokoniosis, emphysema, congestion.

Kidneys—Increased fat over each kidney, left much smaller than right and bile stained. Ureters enlarged in thickness and calibre. Bladder wall thinned from distension.

Generative Organs—Testes exposed, due to ulceration from fluid pressure. Scrotum considerably oedematous, penis the same.

Muscles—Well developed.

Bronchial—Mucous membranes congested.

Thyroid—Enlarged.

Pericardium—Thickened. Much fluid in pericardial sac.

Heart—Bovine—fatty, flabby muscle wall; coronary arteries sclerosed. Calcareous nodules in bicuspid and mitral valves, atrophy of one of the tricuspid cusps. Hypertrophy of left ventricle.

Aorta, etc.—Calcareous areas. Patent ductus arteriosus, from arch of aorta to pulmonary artery.

Abdomen—Distension. Considerable free fluid. Duodenum bile stained. Scybalous masses in sigmoid and rectum.

Stomach—Much dilated. Rugae still present; congestion of mucous membrane.

Spleen—Enlarged, commencing fatty degeneration.

Liver, etc.—Cirrhotic, nutmeg on section. Gall Bladder larger than usual.

Pancreas—Cirrhosed.

NURSING IN THE HOSPITAL FOR INSANE.*

BY LENA A. DAVIS,

Head Nurse, Hospital for Insane, Toronto.

Outside the Hospital for the Insane, the common impression seems to be that when a man or woman has once been admitted to that institution, he or she must abandon all hope. Most people believe that the patients are brought there, handcuffed and tied, and that they are placed in dungeons or strong rooms for safety. This is so far from the truth in the institution, that it is hard to realize that people can know so little about so prevalent an illness.

I think there are more cases of mental illness occurring in Toronto than of typhoid, and yet, even the physicians and nurses of Toronto have not made themselves acquainted with the care and treatment of these cases.

Naturally, there are several forms of mental illness, and this afternoon I will speak more particularly of the women, with whom I come more in contact.

We have a great many old women come to the institution who, because of hard work and worry, become unable to take care of themselves. They become fussy and restless, they do not sleep at nights, they wander about, their memory is bad, they are physically weak, they get lost, and have to be kept somewhere, that someone may have the oversight of them. These patients are not dangerous and not particularly noisy, but they are very hard cases to nurse. They require a great deal of attention, and we think often, that it is attention that should be given them at home. We cannot see reasons why, because a woman is old and infirm, she should be handed over to a Government hospital to be taken care of. Many nurses refuse to take care of these cases at home, because they are restless, and because they complain. All that

this class of patient requires is kindness, patience and tact. They must be kept warm and very comfortably clothed. The nurse must attend to this, because the patient's memory is so bad that she cannot. They must be fed often with light diet. To me it is a pleasure to feel that I have the opportunity to take care of many of these old women, who have been useful citizens, who have given their whole lives to taking care of other people, who have worked and slaved that their children might have advantages and who have now broken down.

Another class of patient that comes very frequently to our door is a woman who has a family of small children, who is ambitious and proud, and who has worked early and late trying to make clothes and provide a home for her little ones. She has no time for amusement, she cannot read, she cannot go to the theatres, she cannot take part in social affairs, she gets up early in the morning and works until late at night. She begins to fail in weight, she becomes anæmic, her bowels become constipated, she feels tired all the time, she becomes restless, she has no energy to go on with her work, she becomes sleepless and despondent. She cannot see any ray of sunlight; looking into the future she cannot see anything but work and worry. About this time she begins to lose her sleep, to become restless, she walks about the house at night. All of this is an additional strain on her frail and delicate system. These cases come to the hospital and are called Exhaustion Cases.

By the time they reach us they are wildly delirious, mark you, I do not say insane, I say delirious, with the same kind of delirium that a typhoid or pneumonia patient has. The lips are covered with sores, the tongue coated, the body wasted, the complexion bad, and the eyes wild, frightened and staring. They are picking at their clothes and possibly tearing them. Frightened and restless, they will not stay in bed. Their pulse will be running from 100 to 140. Their temperature is about 100 or 101 degrees. These are the patients, all ignorant

and coarse people say, "Oh, she is crazy!" whereas, the patient, if she is crazy, should be proud of it, because she has worked and given every bit of herself for someone else. Some of these patients die, but the great majority, with careful nursing, make quick recovery. All that they require is rest, plenty of nourishment, fresh air, kindness, and a few words of encouragement. Carrying a nice tray down to the side of the bed, and fixing up a nice bed, is not nursing one of these patients. The nurse must deliberately plan to win the confidence of that patient. She must sit by her and soothe and coax her into a better state of health. Nourishment must be given to her every hour or two in small quantities. Stimulants must be given, excretions must be looked after, in short she must be nursed in the same way that a new-born baby is nursed. Sometimes when these women come to us it is necessary to feed with a tube for two or three days, because they must immediately begin to get nourishment. If the first two or three days' treatment is what it should be, the patient always recovers and goes back to her home to take up her duties again. The difficult part is to arrange the home life and surroundings, so that she will not again have to work herself to death and exhaust her vitality and return to us for health.

Is there any stigma, I ask you, attached to such an illness as this? We have several of these cases in the acute stage at the present time in our hospital. These cases you will see require special nurses, even one for day duty and one for night duty. We hear every day of general hospitals wanting to send patients to our institution, because they need special attention, whereas we feel that if we cannot give special attention to our patients, we are not doing the best that should be done.

Then again, we have another class of patients, who, because of defective heredity or uncongenial surroundings, or some other reason which we do not know, have developed a mental condition that renders them liable to all sorts of peculiar ideas. They become suspicious

and imagine they have enemies. They imagine that people are not treating them properly, that their friends are plotting against them. They watch all the time to see if they cannot find some ground for these ideas. These patients are very sensitive, their feelings are easily hurt and they think constantly of these. Because of their delusions of persecution and their fears that they may be poisoned or injured in some way, and their ideas that people are talking about them, they form the habit of living much to themselves. They become cross and irritable, and this sort of life will, in a short time, break down their physical health. It only accentuates their delusions, and they become perfectly confident that something is being done to them.

When these patients are brought to the hospital, they are certain that their friends have been plotting this and hold this up as evidence of their persecutions. They say, "Why are people all against me? Why do they put me in the asylum?" They say, "If they give me a fair chance I can work." You will readily see how difficult it is to gain this patient's confidence. She requires a world of attention. She requires a great deal of humoring and a great deal of coaxing. She will get angry with her nurse and abuse her nurse, but the nurse must go right on trying, she must study her patient and find out what irritates her. She must always be pleasant and cheerful, but the unfortunate part of it is, that when we teach these patients to live pleasantly at our place and teach them that everyone in the institution is their friend and that everyone is working for their interest, we cannot arrange the home life and surroundings so as to continue the good work. We have scores of women, who live pleasantly and cheerfully with us, but who, when they go back to their home surroundings, are constantly exposed to petty annoyances and sneers and rude treatment, that re-light the fires of delusions. The question will arise, should these women go back to their home when they are well, to be again annoyed into a condition of ill-

health, or should they stay with us where they are happy and where they are surrounded with friends who understand them.

I think you will say that in our work, each case must be treated on its merits. No two cases can be treated the same. Each case must be studied and the mental condition analyzed. The cause for this mental condition must be understood and removed.

A nurse may be a good nurse for a case of typhoid and give her patient excellent care, without becoming much interested in the personality of her patient, but in order to be a good nurse for a mental illness, the nurse must enter into all the mental griefs and worries of that patient. That patient's personal affairs and personal troubles must be the nurse's personal affairs and personal troubles. She must feel that she suffers for them and with them. The patient must know that the nurse is giving her life's best effort. You may think this sounds exaggerated, but to me it is not so.

We have scores of cases where the patient, in a moment of anger or delirium, strikes or scratches the nurse and the nurse's only response would be, "Oh! you poor thing." One of our male patients who had been in the care of one of our oldest employees struck this old man, and cut his lip badly. When the doctor wanted to remove this patient to another ward, the employee came down to the office and said, "I had Willie for a long time and I understand him better than anybody else can." He said, "If Willie goes to that ward, his bad spells will come on twice as often and they won't understand him and he won't do so well."

Another department that I wish to mention for a moment, although I do not come so closely in contact with it, is the male admission ward. This ward receives every male patient that comes in, whether from the hospital, the home or the gaol. Every patient comes to this ward and is put to bed and nursed there until it is decided that he is not an acute case, and most of the patients

remain there about two months. This ward is managed by female nurses. You may think it strange, but no male patient has in any way conducted himself in such a way as to hurt the feelings of the nurse. I wanted to mention this to prove to you that our patients are not the dangerous people that they are represented. Our patients are human beings and have all the hopes, ambitions, desires and faults that human beings have. We get some people who are only unpleasant, because our patients are human beings. We get more who naturally try to be courteous and kind. It is a peculiarity of human nature that one person will try to act towards another in that way that he is being treated by the first one; and we find that our patients, if treated in a gentle manner by a female nurse never fail to respond. We have had men sent here from Toronto gaol with the reputation of being dangerous and violent men, who could not be managed by the police or authorities at the gaol. They are at once turned over to our nurses and at once they begin to live up to it, showing that their mental illness does not make any change in their dispositions and character.

If I can this afternoon make you understand that our patients are the same human beings and the same people that you and I are, and that your patients are, and if I can make you understand that our nurses are doing noble work, I will feel amply repaid.

Many of our nurses come to us when young girls. They make their home at the institution, they get acquainted and wrap themselves up in the work, they spend their life doing that work. We have some who have been with us for thirty years. Some of these women are very superior women personally, and they have become interested in this work. They always have the idea that they are going to go at something else, but all the time they are too much interested in what they are doing to look for something else. Naturally we have many girls who come to us, stay but a short time and go away again. Many of them are good girls, but are

unsuitable for this work. They are not willing to make the necessary sacrifice. We believe that it is a noble calling for a nurse, and we also believe that the patient who has suffered from a mental illness can go out and do just as good and useful work and be just as good a woman as the patient who has suffered from pneumonia or typhoid. We can see no reason why a stigma should be attached to a person who has once been in our institution.

These are the ideals that we attempt to hold before our patients and our nurses. This is the work that we are doing and are proud to do.

REVIEW.

The Psychoneuroses and their Treatment by Psychotherapy, by PROFESSOR J. DEJERINE, Professor of the Clinic for Nervous Diseases of the Faculty of Medicine of the University of Paris; and DR. E. GAUCKLER, ancien interne of the Hospitals of Paris. Authorized translation by SMITH ELY JELLIFFE, M.D., Ph.D., Adjunct Professor of Diseases of the Mind and Nervous System, Post-Graduate Medical School and Hospital; Visiting Neurologist, City Hospital, New York. Published by J. B. Lippincott Company, Philadelphia and London.

This book is well written and well worth reading. It considers the subject from an entirely new view point. The author is very thorough, and very clear in his conception of the subject. He first describes all the different neuroses, devoting his attention to the different organs of the body in order. He then attempts to explain the causes of the development of these troubles. Later on he describes the methods of treatment by Psychotherapy, but one of the most interesting chapters in the book is discussing the best methods of prophylactic treatment. The author seems to think that this trouble should be recognized early, and preventive treatment given before the symptoms become firmly established.

The book is well worthy of a place in any physician's library.

(H. C.)

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